

B1
C2K
on place of Compound A-1 so that a film containing 2% by mole of this fluoroanthene was formed.--

IN THE CLAIMS

Please cancel Claims 2, 9, and 10 without prejudice.

Please amend the claims as follows.

SUB 17
3. (Twice Amended) The organic electroluminescence device according to Claim 13, wherein the organic layer is at least one of a hole transporting layer and a light emitting layer.

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4. (Twice Amended) The organic electroluminescence device according to Claim 13, wherein the organic layer comprises 1 to 70% by weight of said compound which is selected from compounds represented by general formulae [1] to [14] and [16] to [18]:.

5. (Twice Amended) The organic electroluminescence device according to Claim 13, wherein a layer of an inorganic compound is disposed between the organic layer and the electrode.

6. (Twice Amended) The organic electroluminescence device according to Claim 13, which emits reddish light.

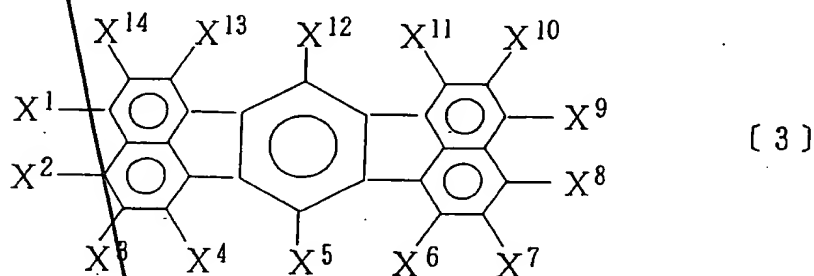
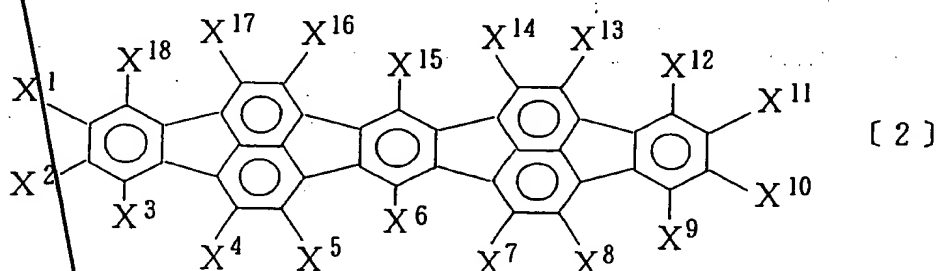
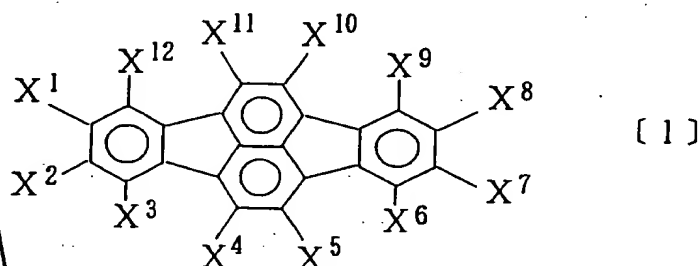
7. (Twice Amended) The organic electroluminescence device according to Claim 13, wherein the organic layer comprises said compound and isomers thereof.

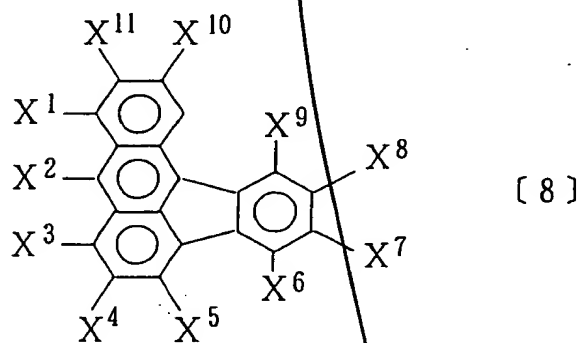
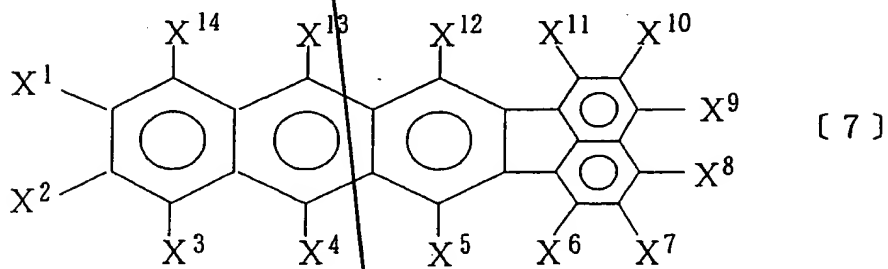
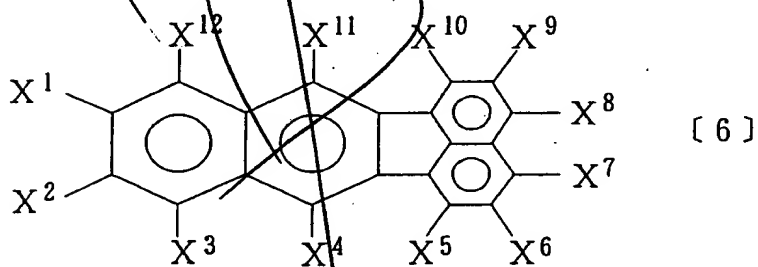
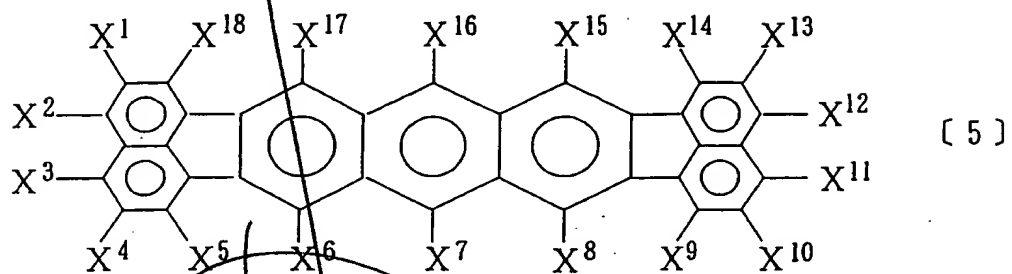
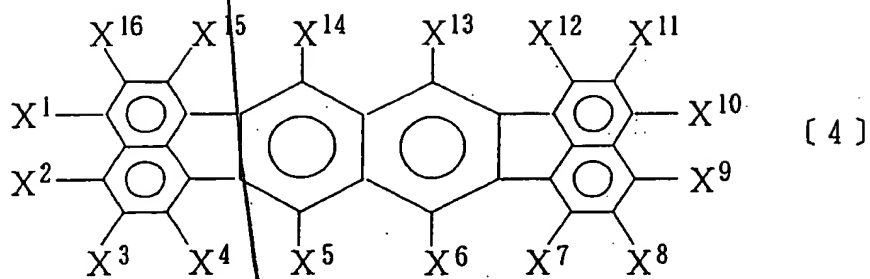
3
SUB 11. (Amended) The organic electroluminescence device according to Claim 13,
wherein the organic layer comprises at least one member of the group consisting of a hole
transporting layer and a light emitting layer, and wherein a layer of an inorganic compound is
between the organic layer and the electrode.

12. (Amended) The organic electroluminescence device according to Claim 6,
wherein the organic layer comprises at least one member of the group consisting of a hole
transporting layer and a light emitting layer.--

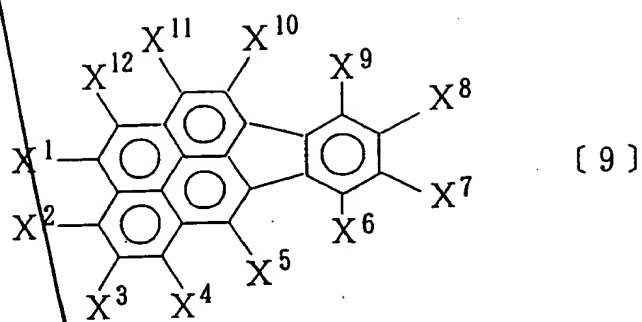
Please add the following claims.

13. (New) An organic electroluminescence device which comprises an organic layer disposed between at least one pair of electrodes, wherein the organic layer comprises a compound having a fluoranthene skeleton structure substituted at least with an amine group or an alkenyl group, and wherein the organic layer comprises a metal complex of quinoline and a compound selected from compounds represented by the following general formulae [1] to [14] and [16] to [18]:

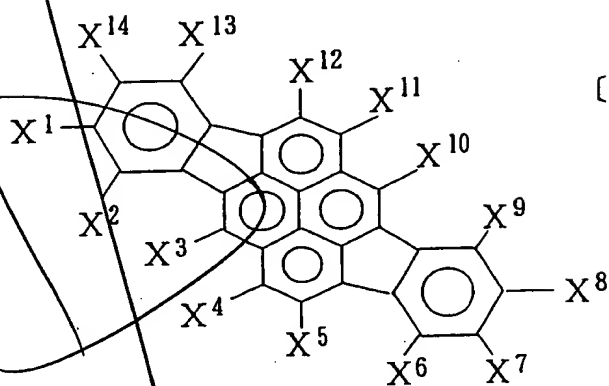




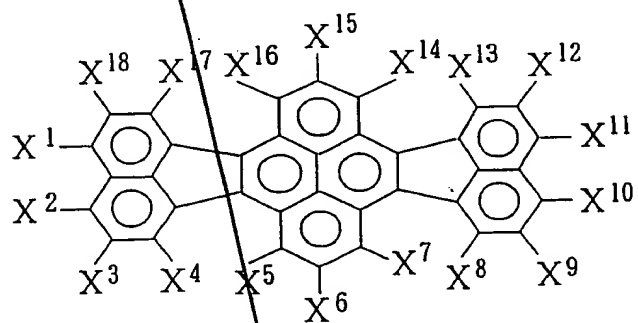
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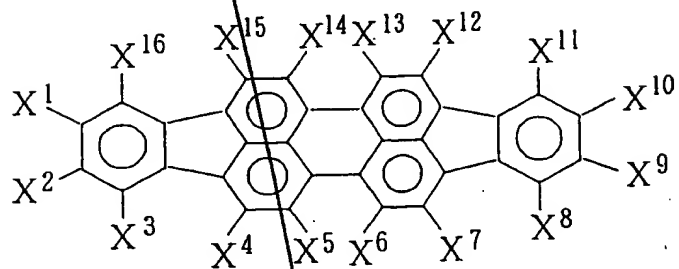
[9]



[10]

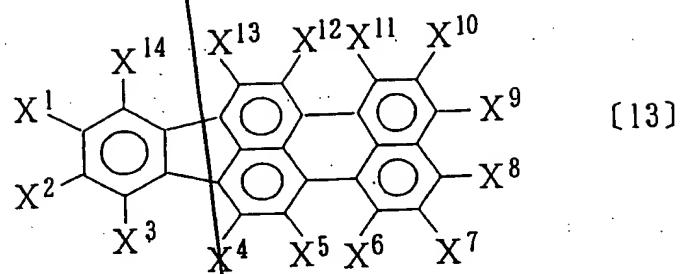


[11]

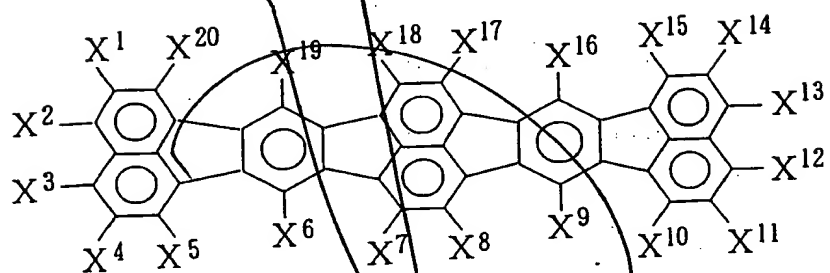


[12]

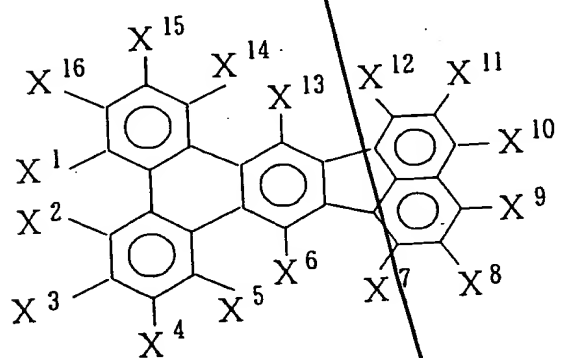
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[13]

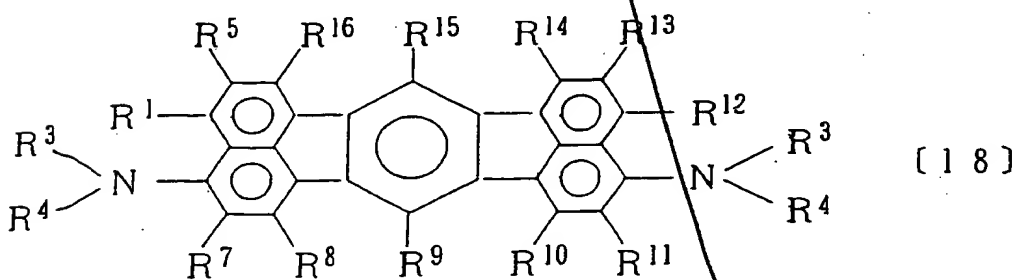
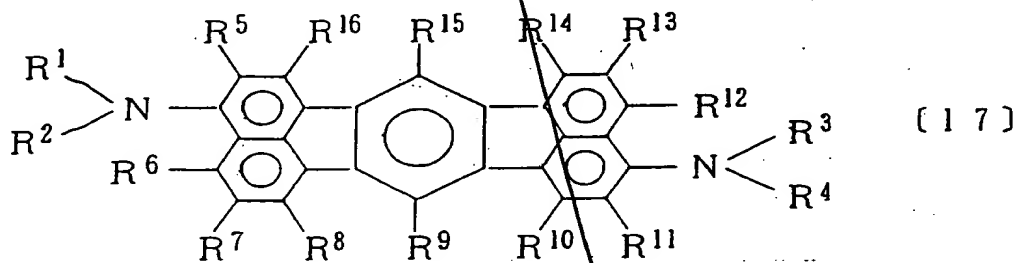


[14]



[16]

wherein X^1 to X^{20} each independently represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms a pair of adjacent groups represented by X^1 to X^{20} and a pair of adjacent substituents to groups represented by X^1 to X^{20} may form a cyclic structure in combination when a pair of adjacent substituents are aryl groups, the pair of substituents may be a single group; and at least one of substituents represented by X^1 to X^i , i representing a number of 12 to 20, comprises an amine group or an alkenyl group; with the exception that the combination of forming any cyclic structure with any of the substituted group pairs X^{13} and X^{14} , X^3 and X^4 , X^{10} and X^{11} , and X^6 and X^7 in the general formula (3) is omitted;

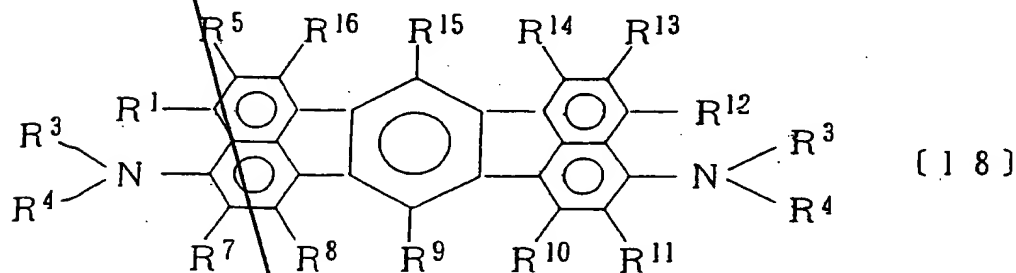
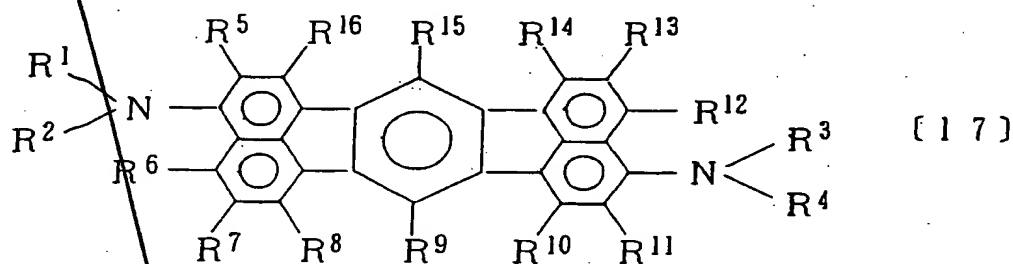


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wherein R^1 to R^4 each independently represent an alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted aryl group having 6 to 30 carbon atoms in one or both of a pair of groups represented by R^1 and R^2 and a pair of groups represented by R^3 and R^4 , the groups forming the pair may be bonded through -O- or -S-; R^5 to R^{16} represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms; a pair of adjacent groups represented by R^5 to R^{16} and a pair of adjacent substituents to groups represented by R^5 to R^{16} may form a cyclic structure in combination; and at least one of substituents represented by R^5 to R^{16} comprises an amine group.

SUB 17

14. (New) An organic electroluminescence device which comprises an organic layer disposed between at least one pair of electrodes, wherein the organic layer comprises a metal complex of quinoline and a compound selected from compounds represented by the following general formulae [17] and [18]:

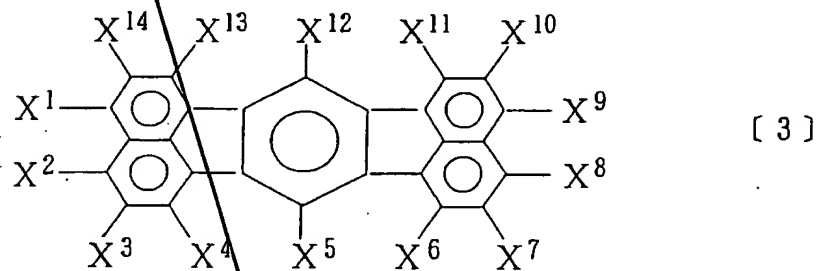
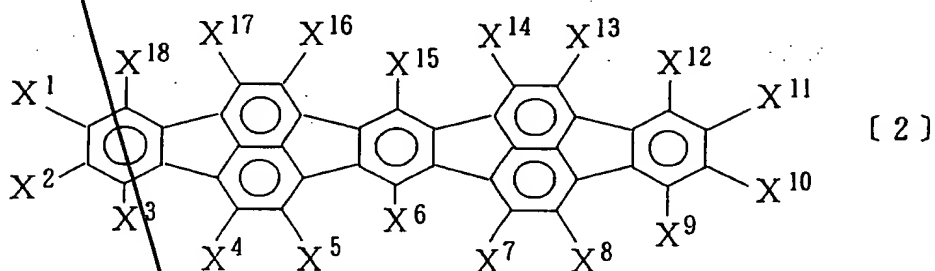
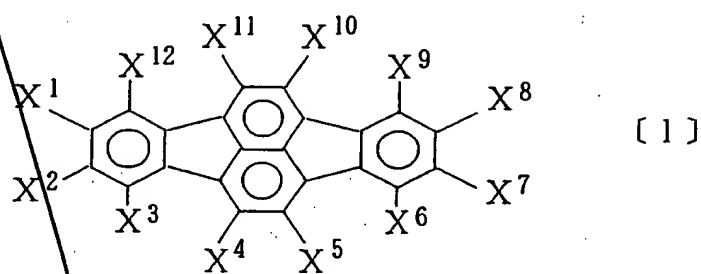


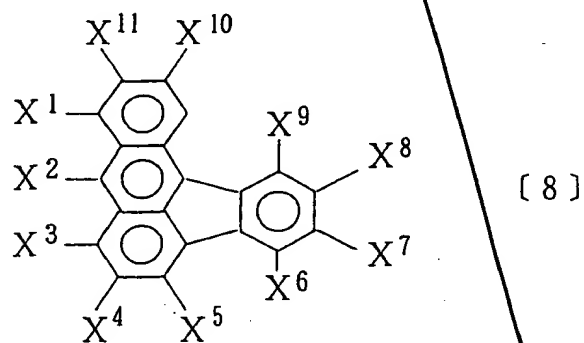
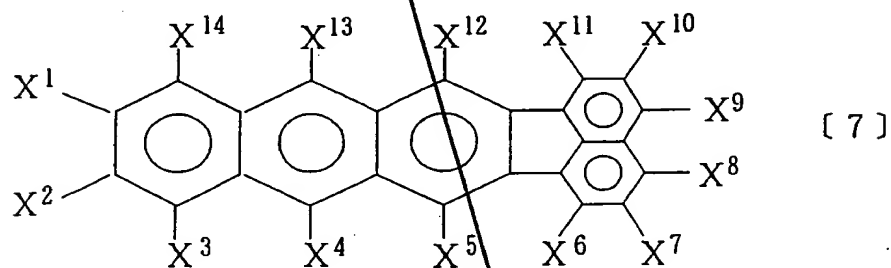
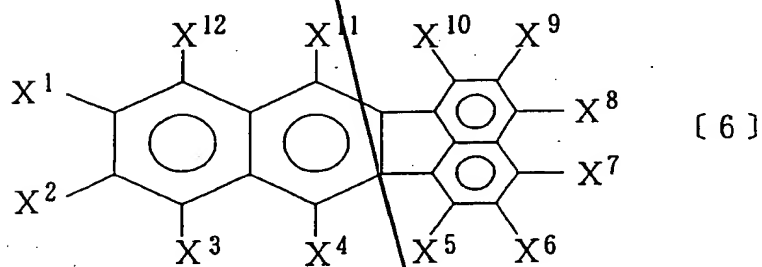
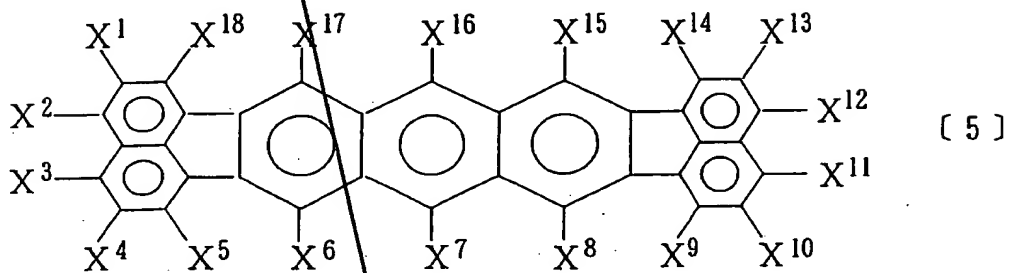
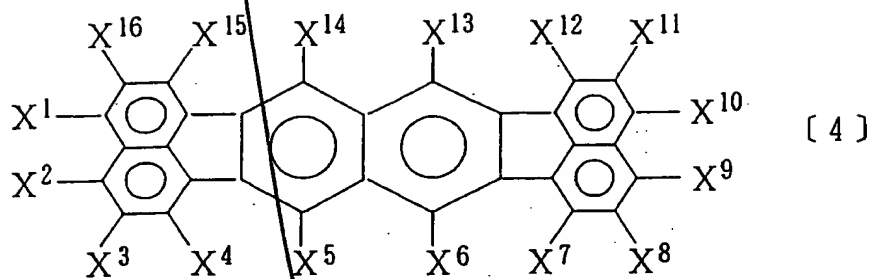
wherein R¹ to R⁴ each independently represent an alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted aryl group having 6 to 30 carbon atoms in one or both of a pair of groups represented by R¹ and R² and a pair of groups represented by R³ and R⁴, the groups forming the pair may be bonded through -O- or -S-; R⁵ to R¹⁶ represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30

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carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms a pair of adjacent groups represented by R^5 to R^{16} and a pair of adjacent substituents to groups represented by R^5 to R^{16} may form a cyclic structure in combination; and at least one of substituents represented by R^5 to R^{16} comprises an amine group; and isomers thereof, wherein, among said compound and isomers thereof, a ratio of an amount by mole of an isomer represented by general formula [17] to an amount by mole of an isomer represented by general formula [18] is in a range of 90:10 to 60:40.

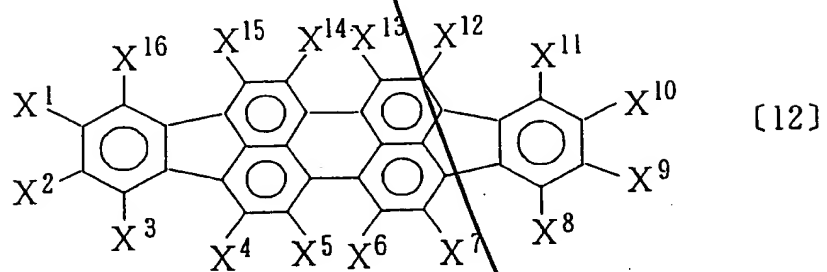
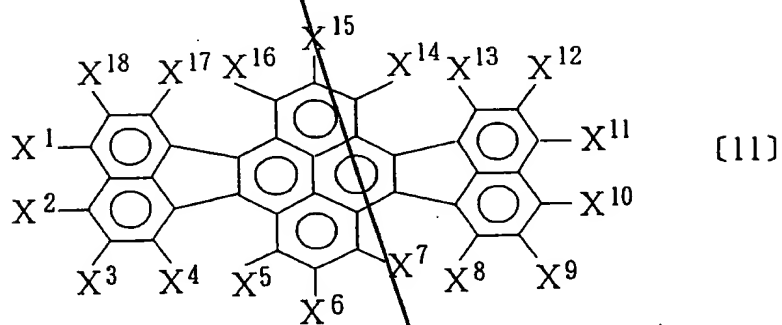
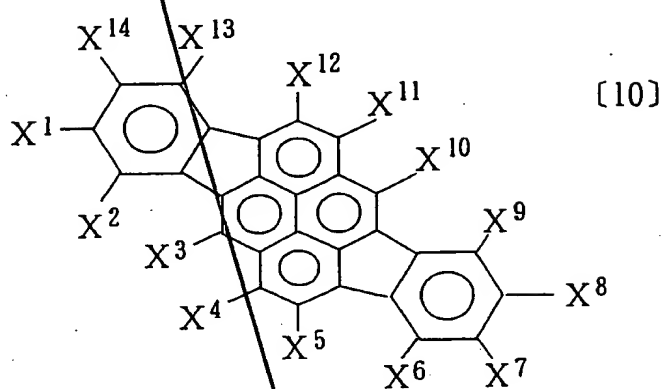
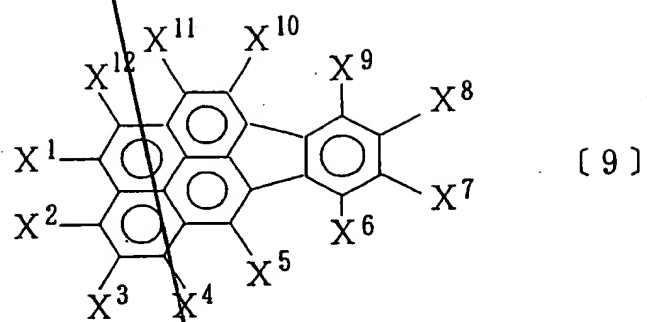
15. (New) A compound having a fluoranthene skeleton structure substituted at least with an amino group or an alkenyl group represented by any of the following general formulae [1] to [14] and [16] to [18]:



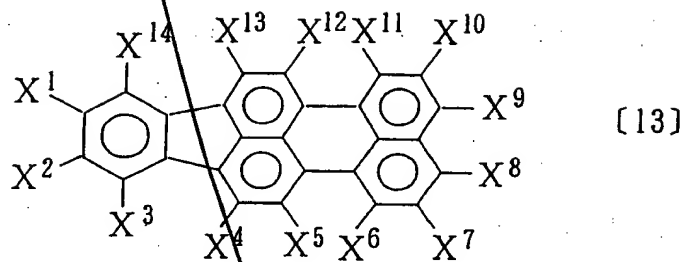


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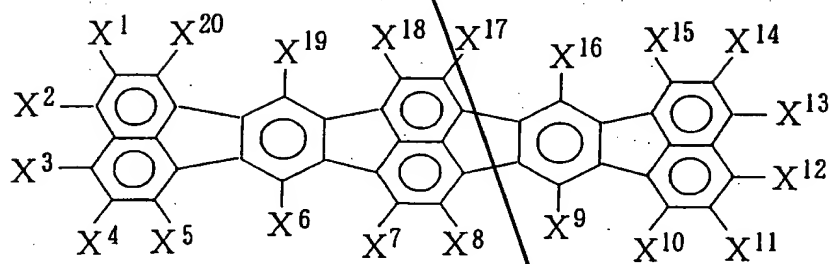
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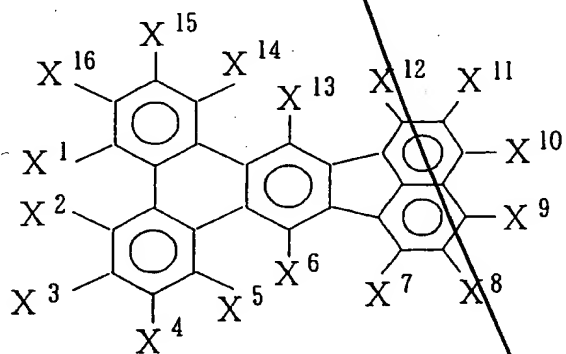
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[13]

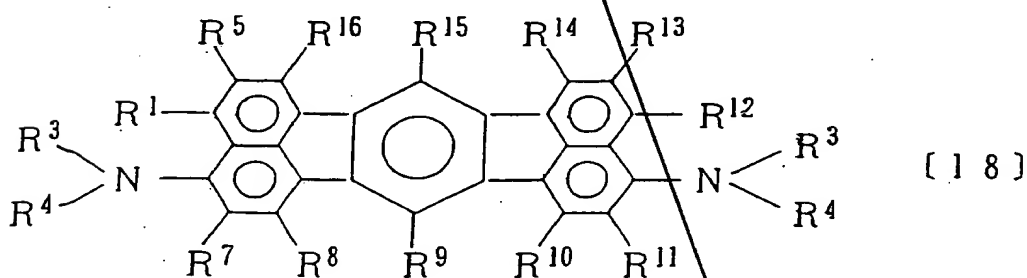
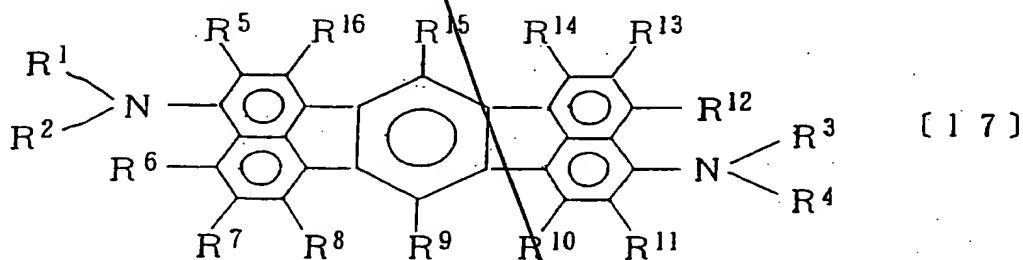


[14]



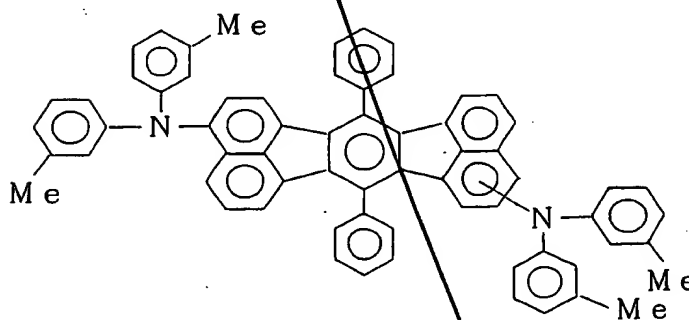
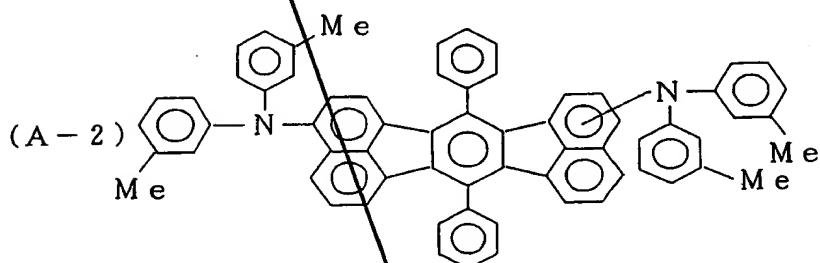
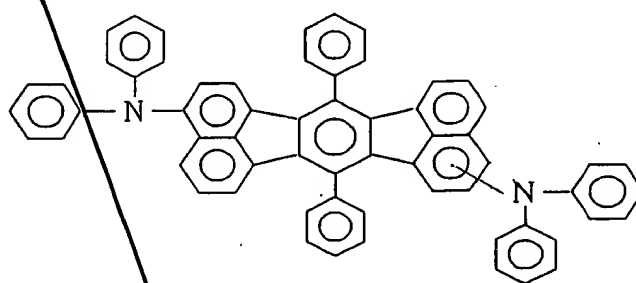
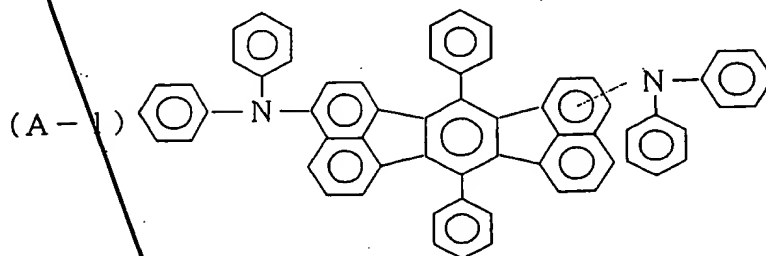
[16]

wherein X^1 to X^{20} each independently represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms a pair of adjacent groups represented by X^1 to X^{20} and a pair of adjacent substituents to groups represented by X^1 to X^{20} may form a cyclic structure in combination; when a pair of adjacent substituents are aryl groups, the pair of substituents may be a single group; and at least one of substituents represented by X^1 to X^i , i representing a number of 12 to 20, comprises an amine group or an alkenyl group; with the exception that the combination of forming any cyclic structure with any of the substituted group pairs X^{13} and X^{14} , X^3 and X^4 , X^{10} and X^{11} , and X^6 and X^7 in the general formula (3) is omitted;



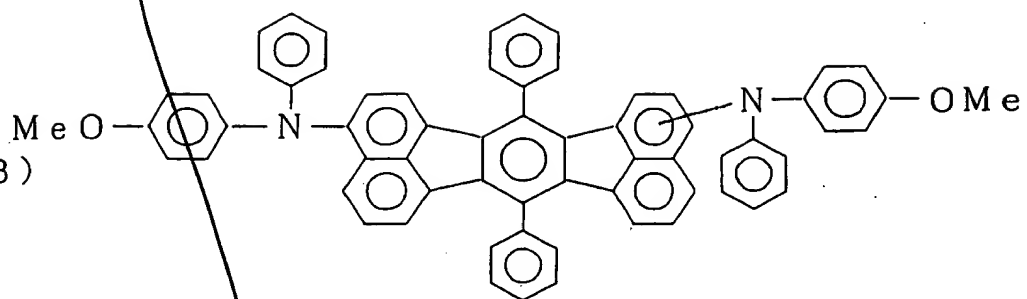
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wherein R¹ to R⁴ each independently represent an alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted aryl group having 6 to 30 carbon atoms in one or both of a pair of groups represented by R¹ and R² and a pair of groups represented by R³ and R⁴, the groups forming the pair may be bonded through -O- or -S-; R⁵ to R¹⁶ represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms; a pair of adjacent groups represented by R⁵ to R¹⁶ and a pair of adjacent substituents to groups represented by R⁵ to R¹⁶ may form a cyclic structure in combination; and at least one of substituents represented by R⁵ to R¹⁶ comprises an amine group.

16. (New) The organic electroluminescence device according to Claim 13, wherein the compound has at least one structure selected from the group consisting of:



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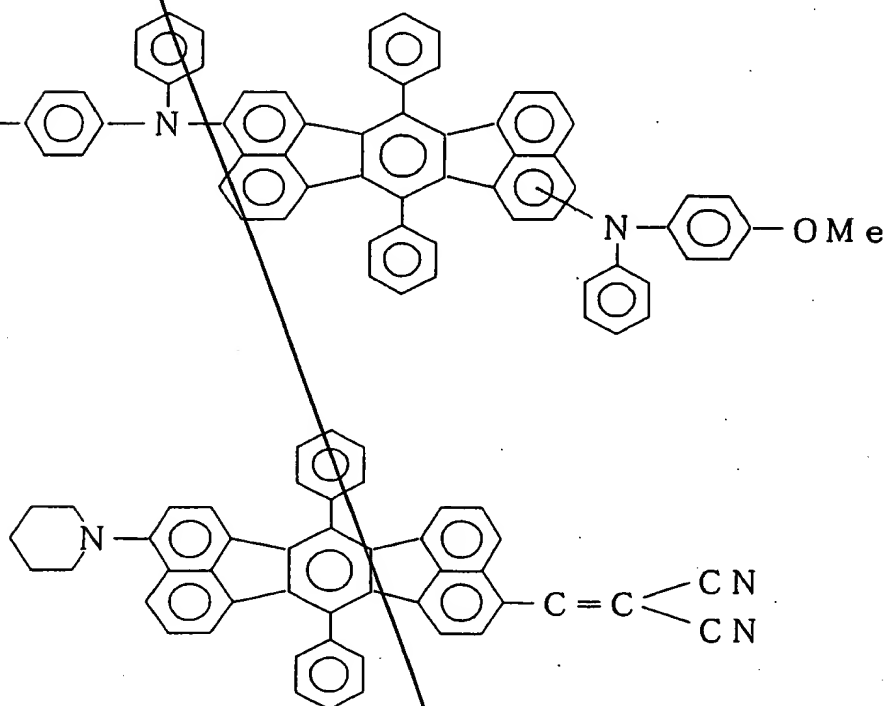
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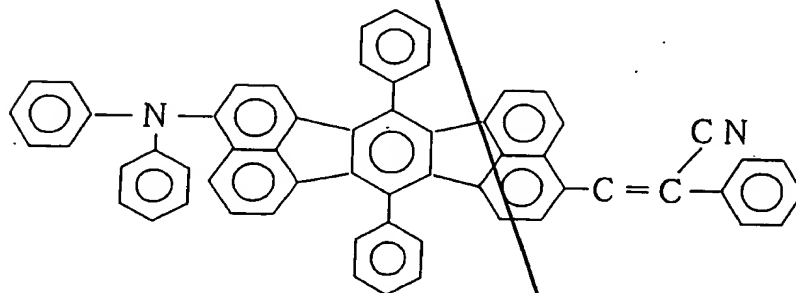
MeO

MeO

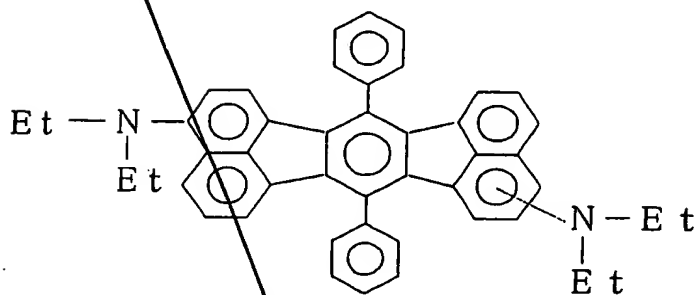
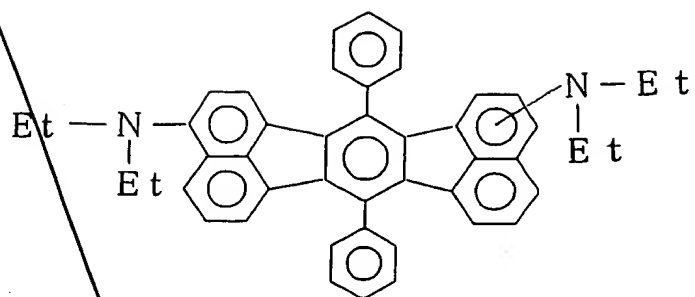
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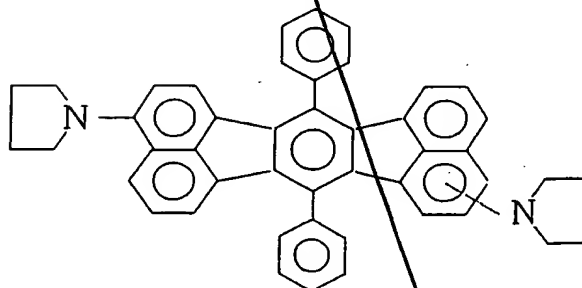
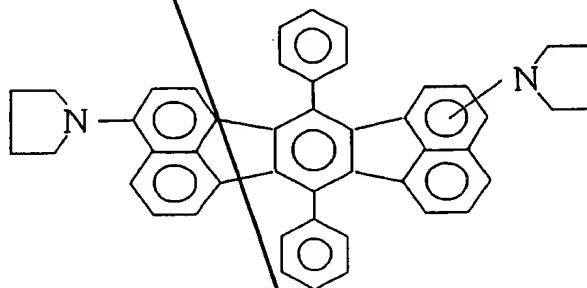
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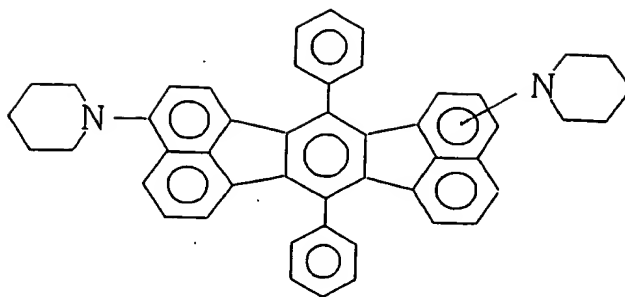
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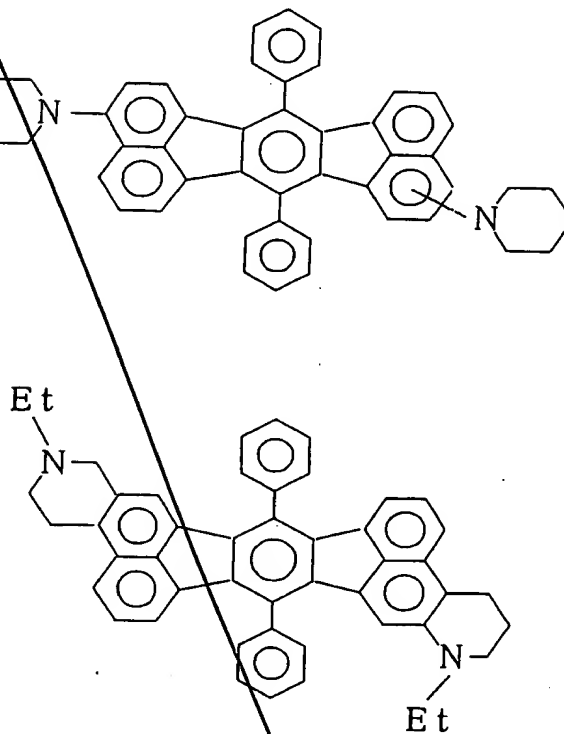
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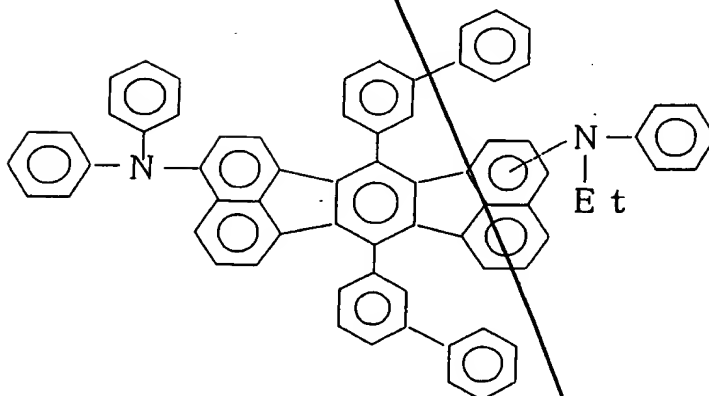
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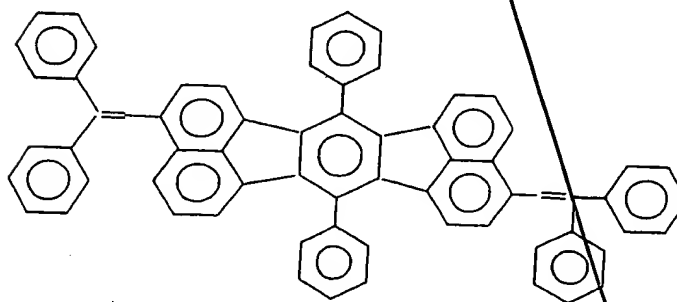
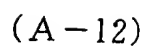
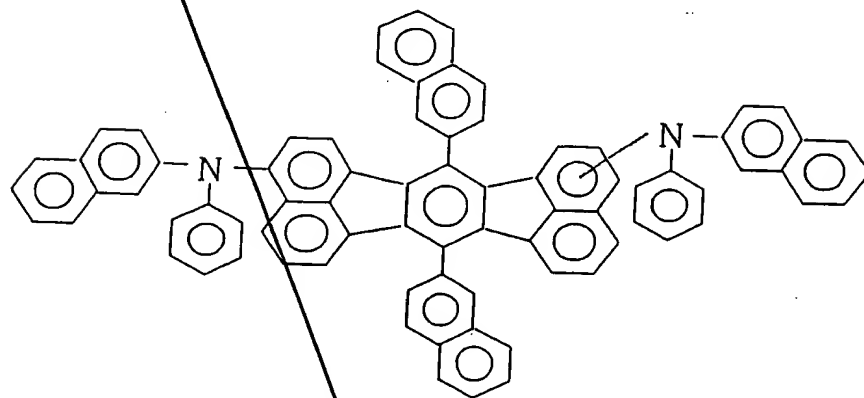
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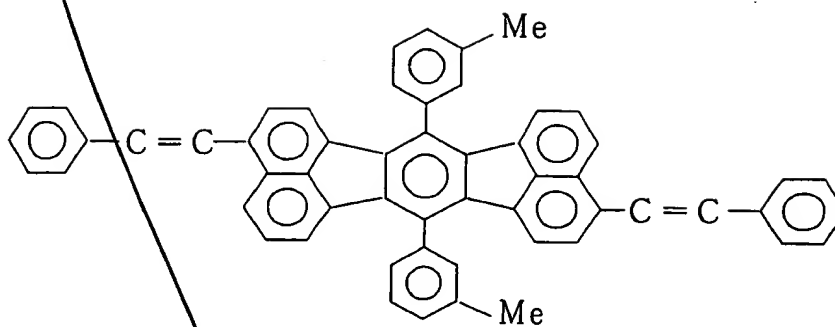
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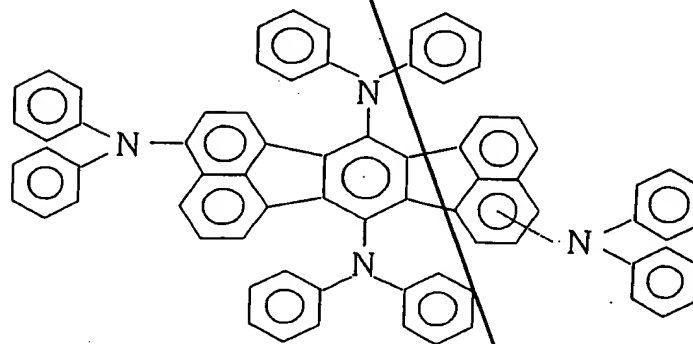
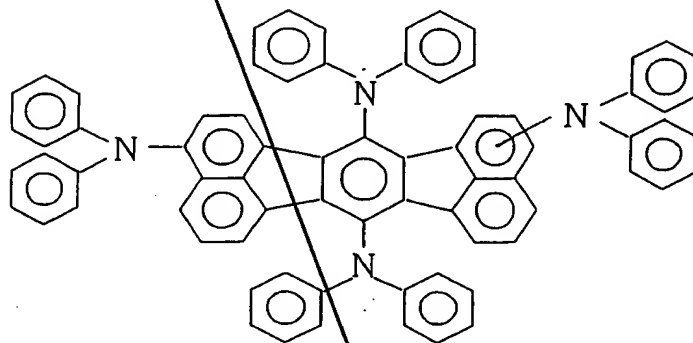
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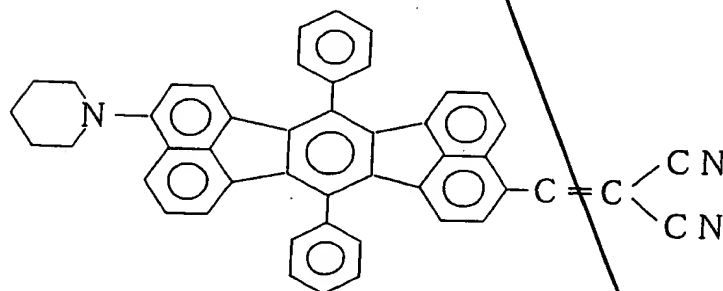
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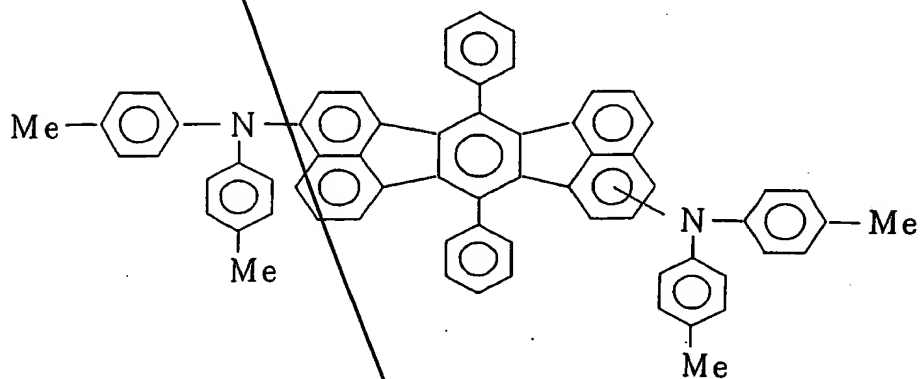
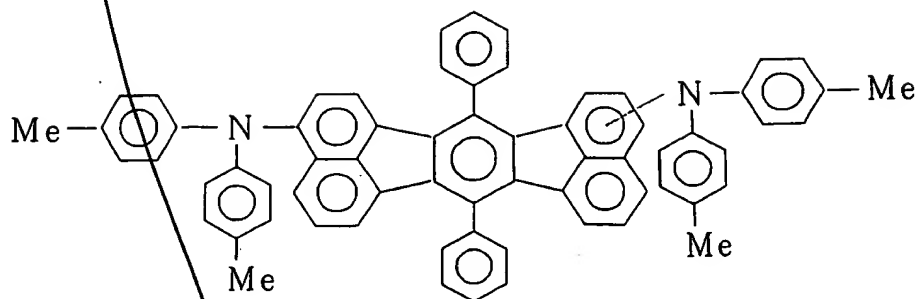
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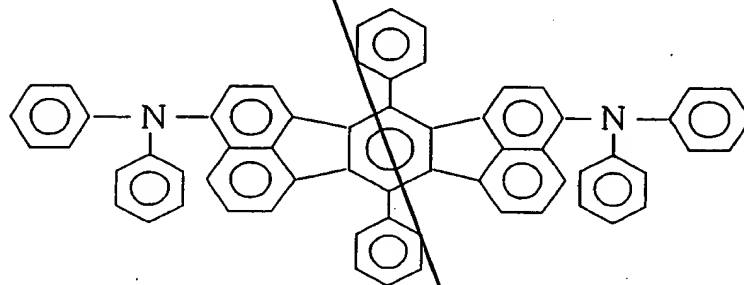
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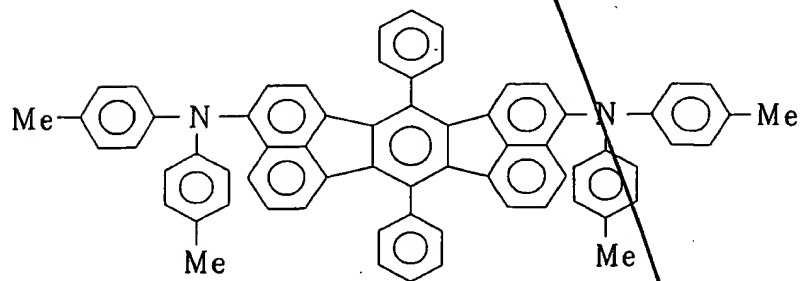
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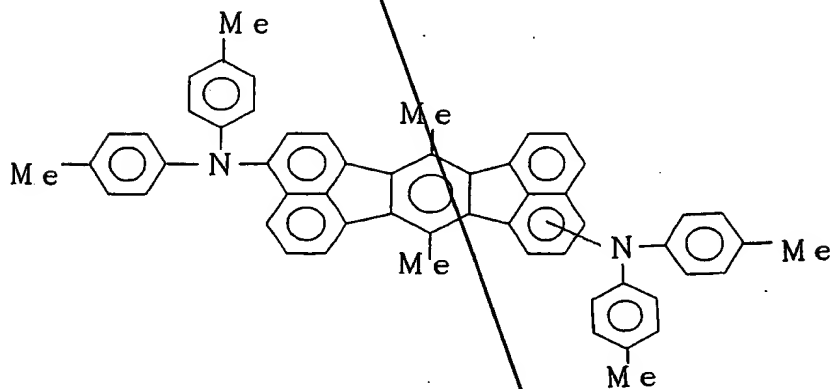
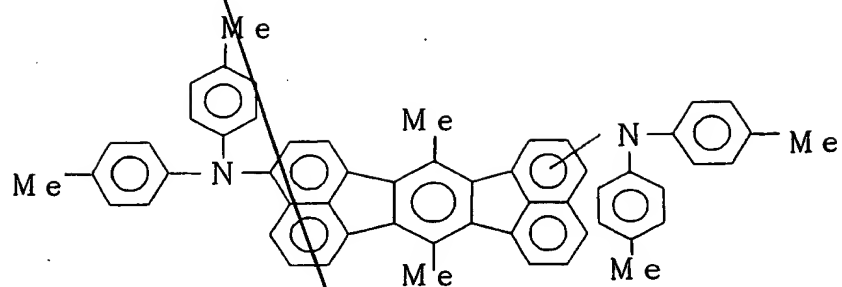
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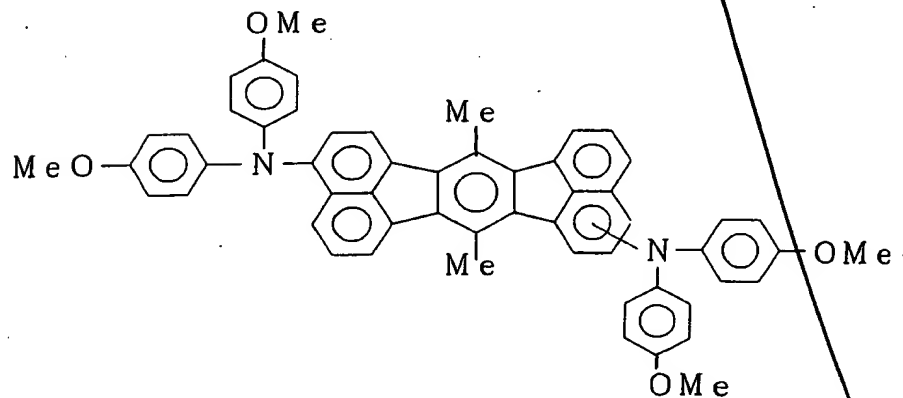
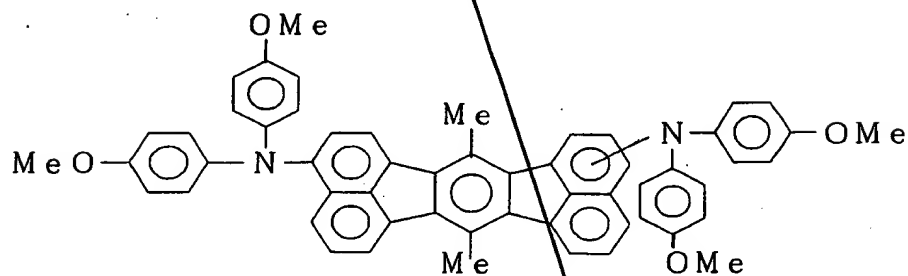
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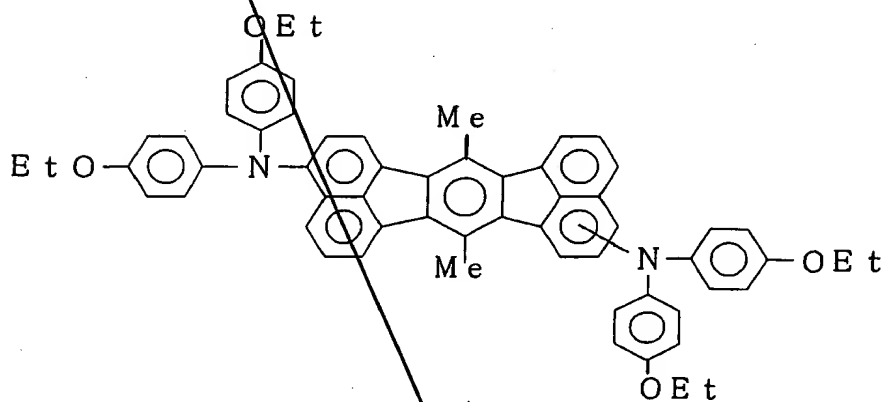
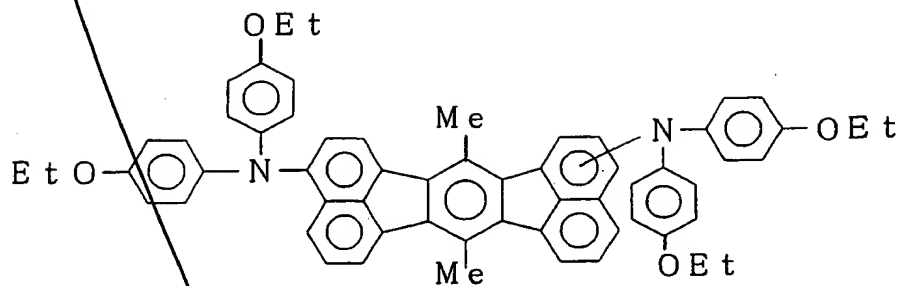
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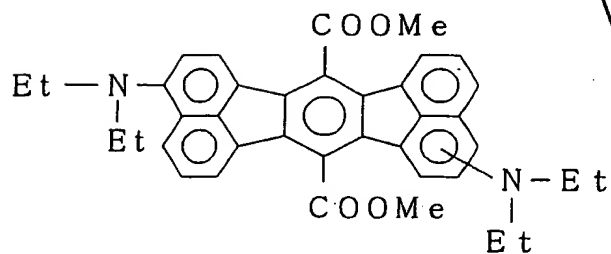
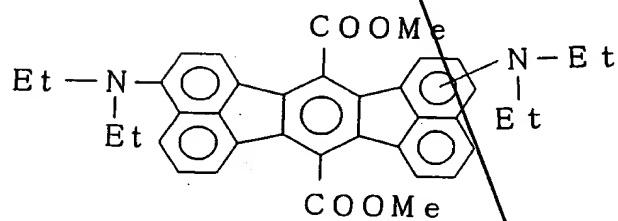
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(A-21)

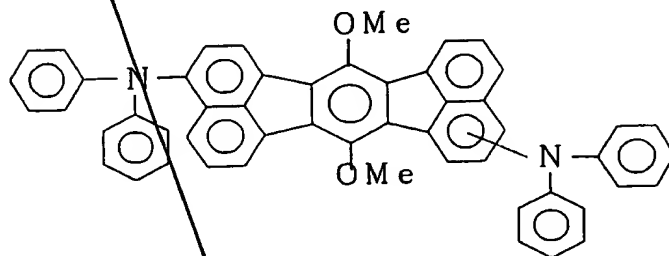
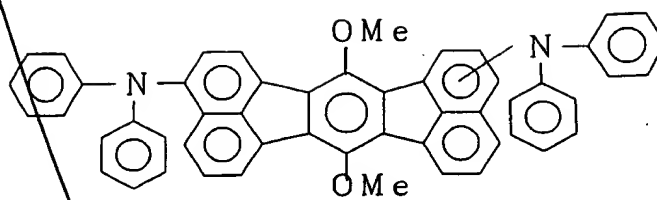


(A-22)

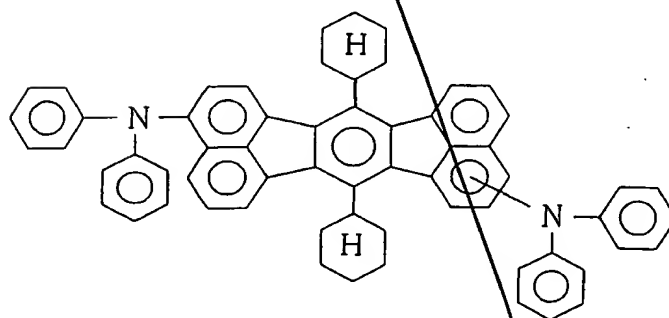
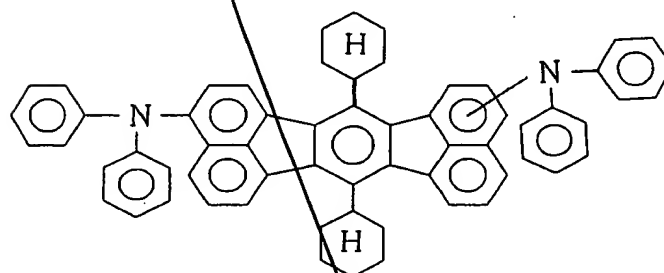


B9 cat

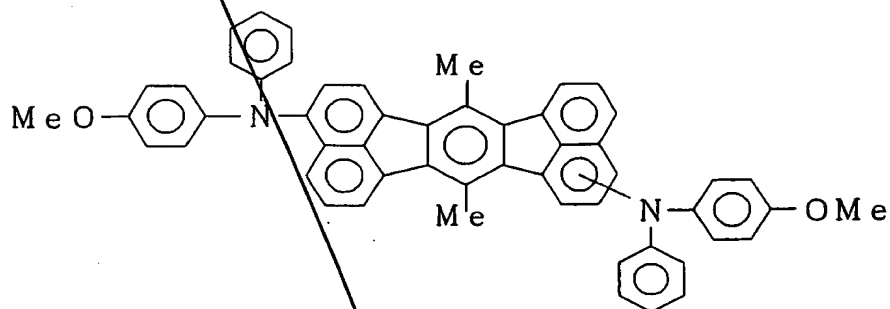
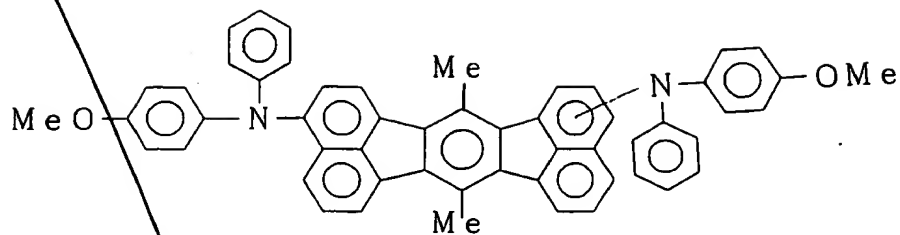
(A-23)



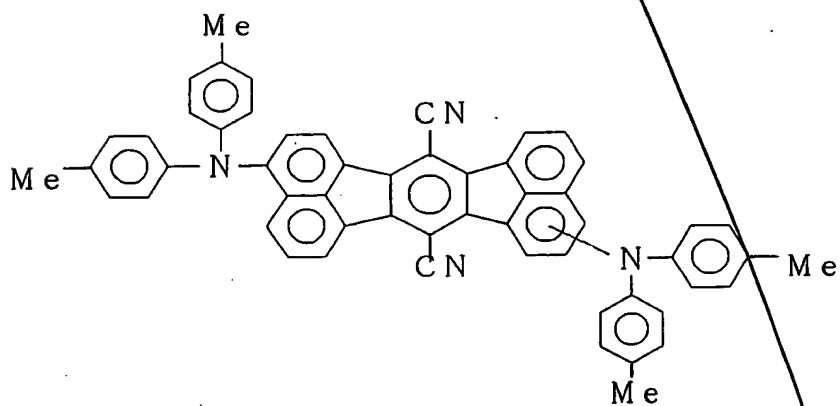
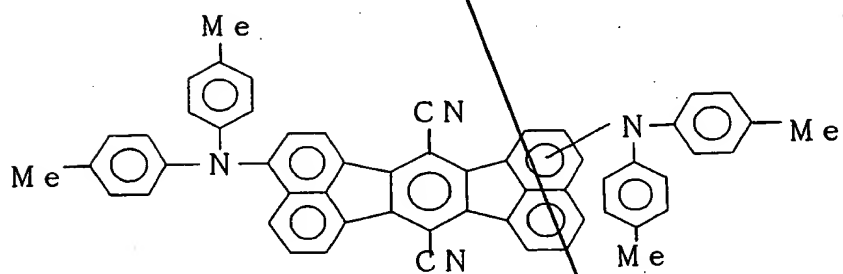
(A-24)



(A-25)

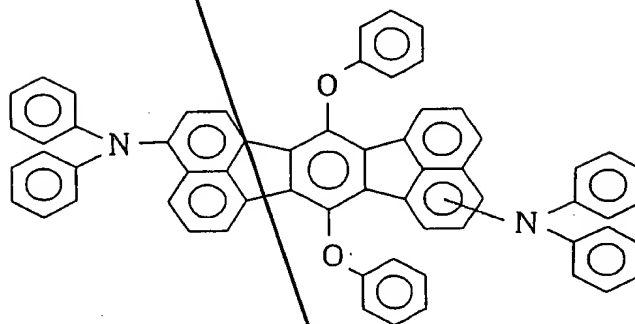
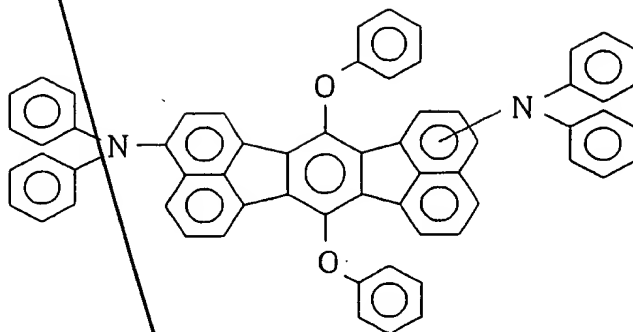


(A-26)

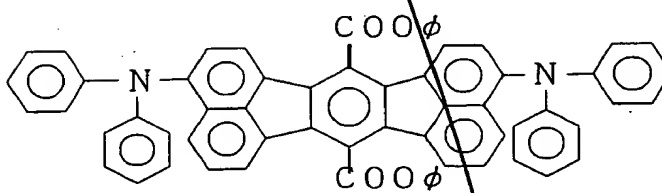


B/Mar 16

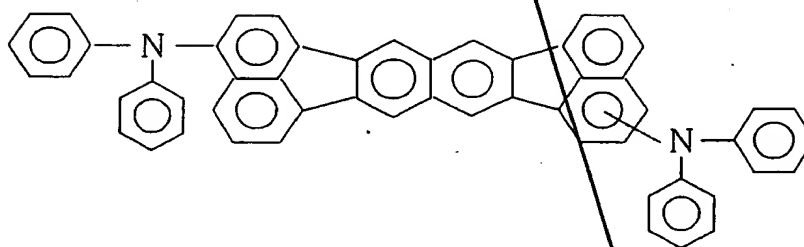
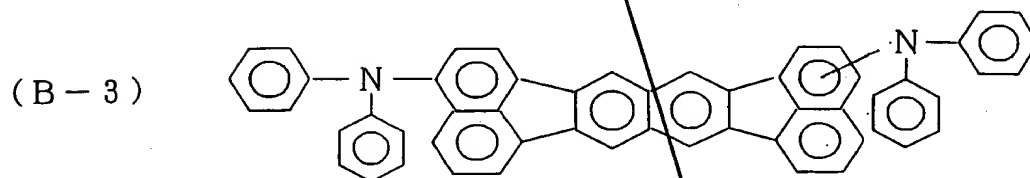
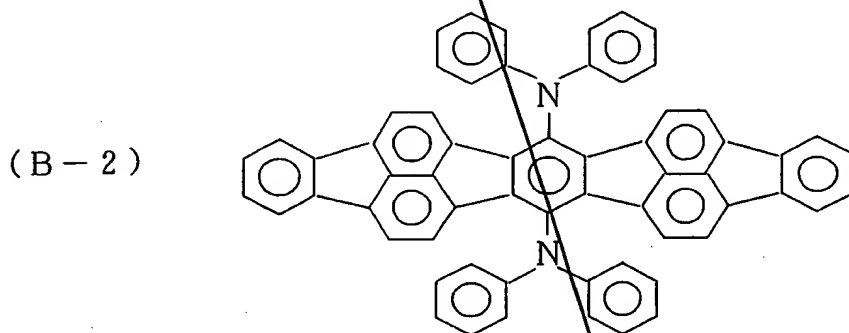
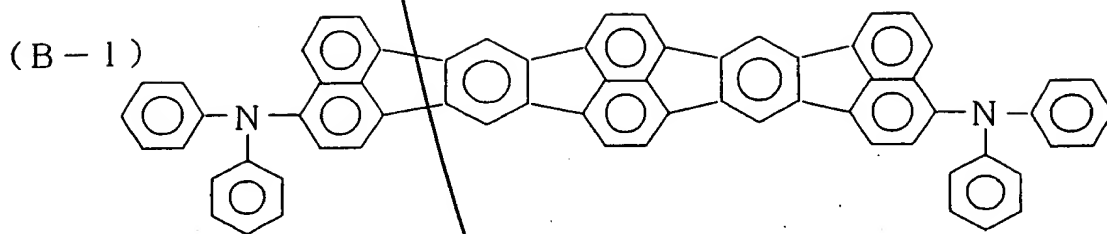
(A-27)



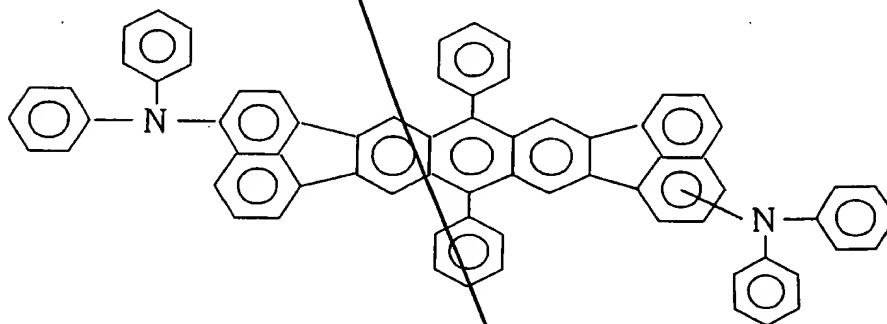
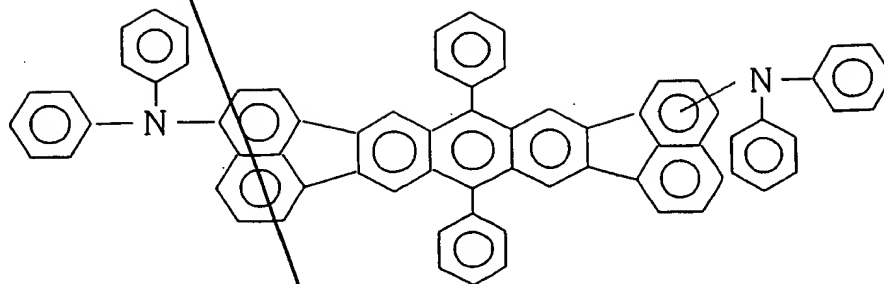
(A-28)



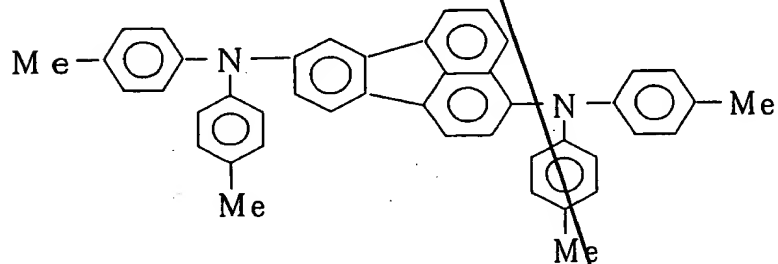
(ϕ is phenyl group)



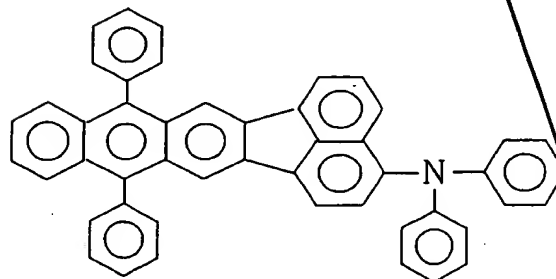
(B - 4)



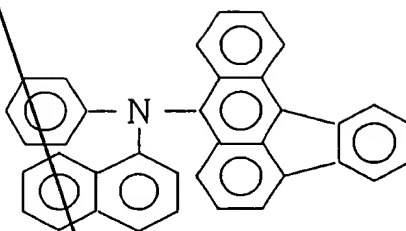
(B - 5)



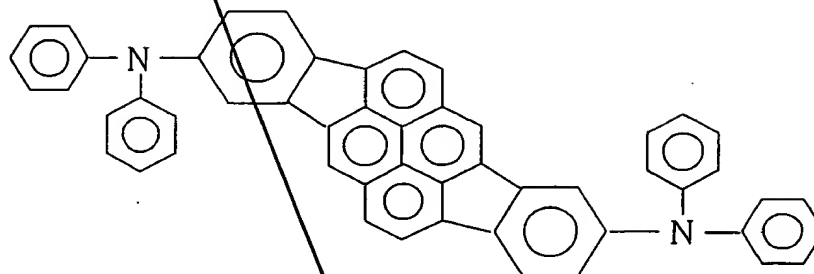
(B - 6)



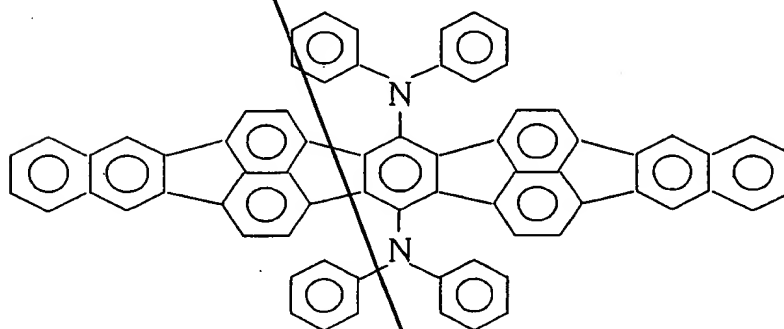
(B-7)



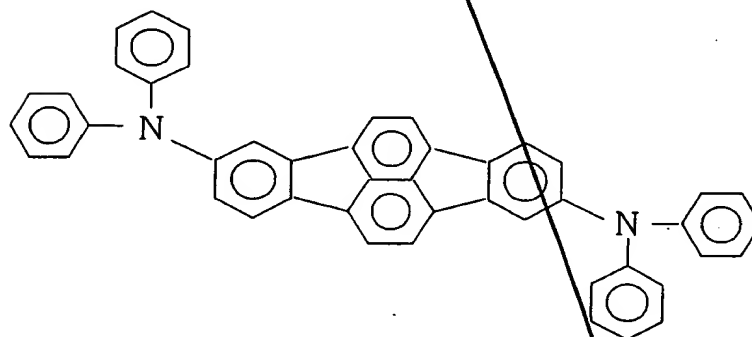
(B-8)



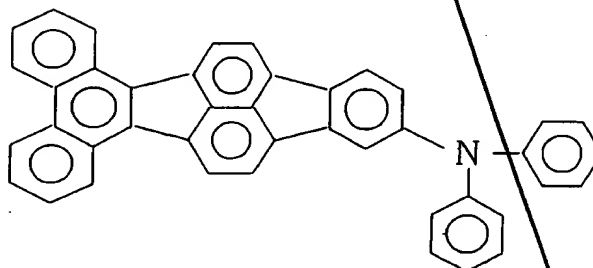
(B-9)



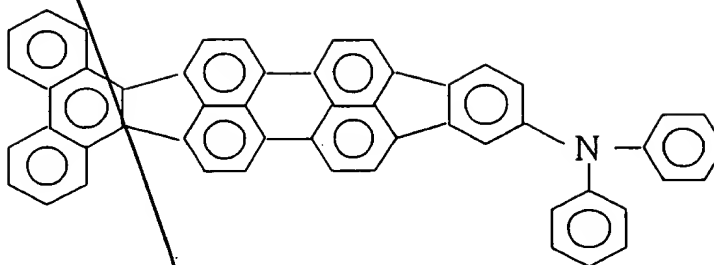
(B-10)



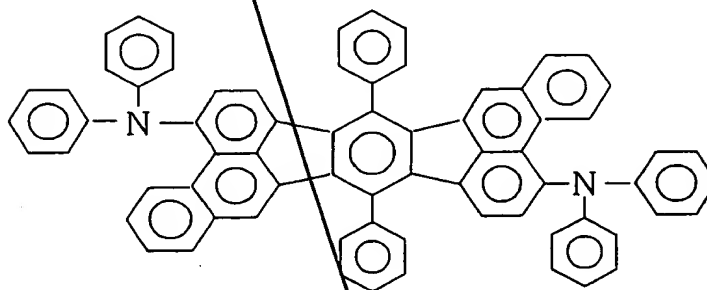
(B-11)



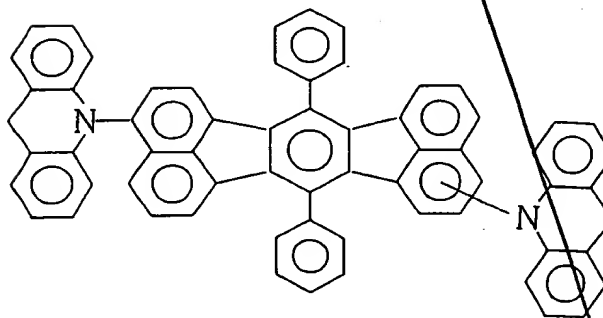
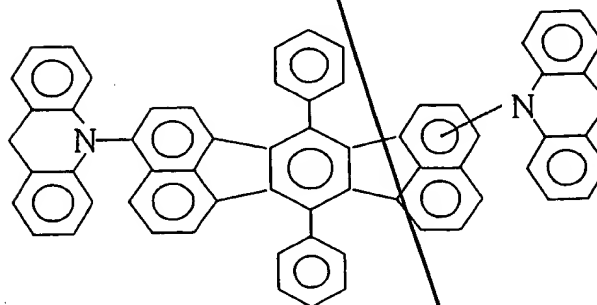
(B-12)



(B-13)

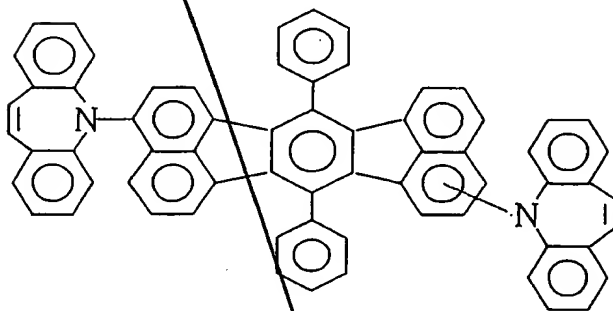
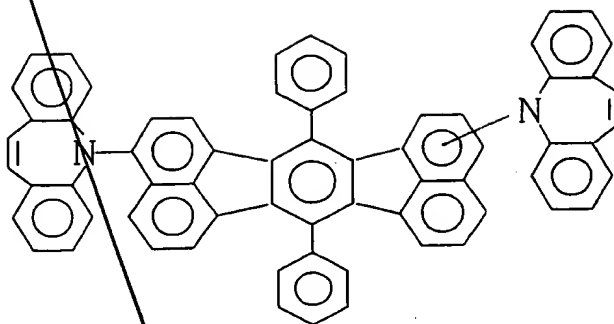


(B-14)

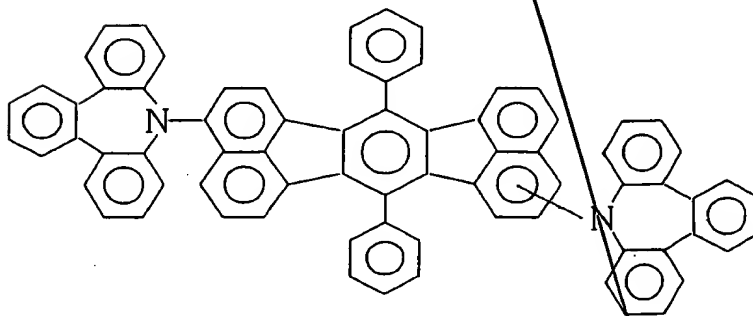
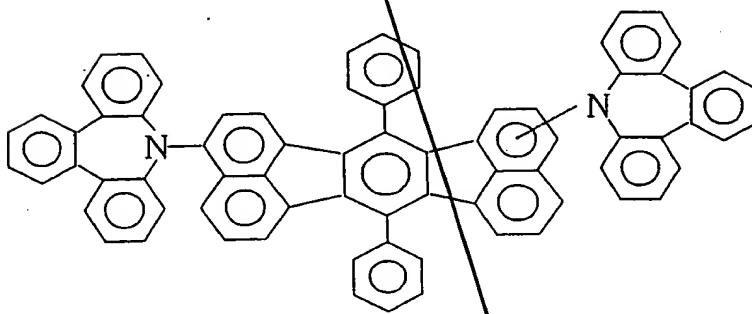


B/Cat

(B-15)

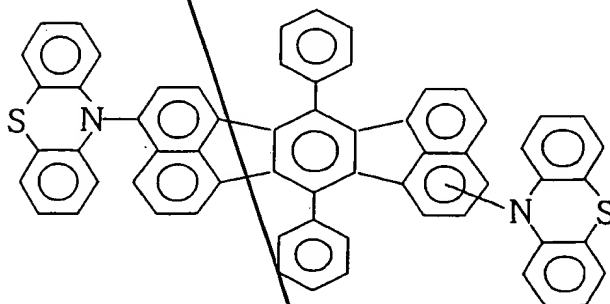
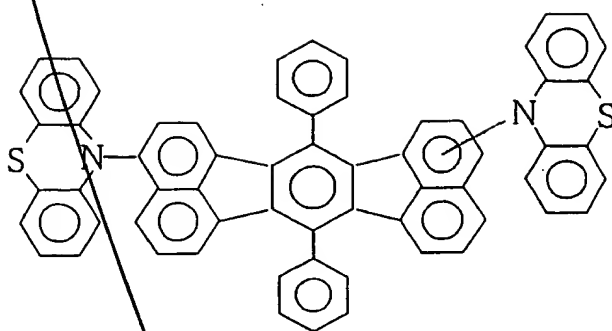


(B-16)

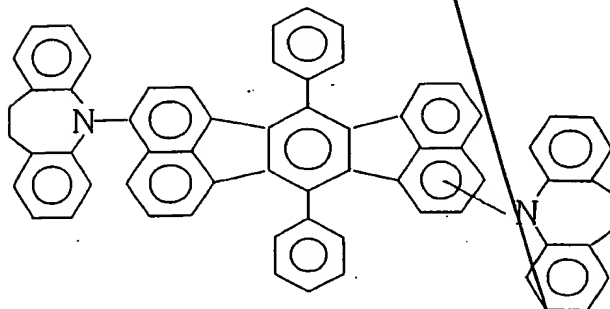
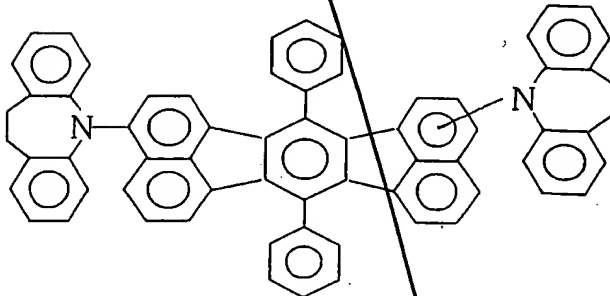


B4 Cantak

(B-17)

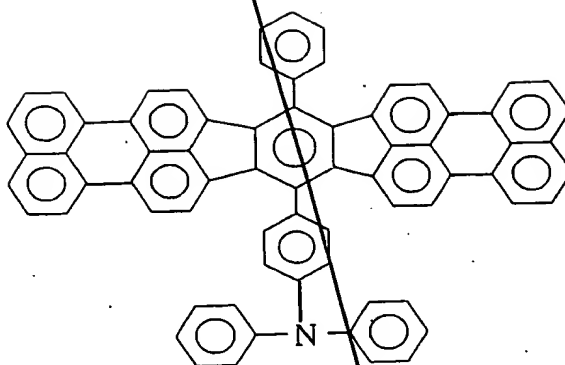


(B-18)

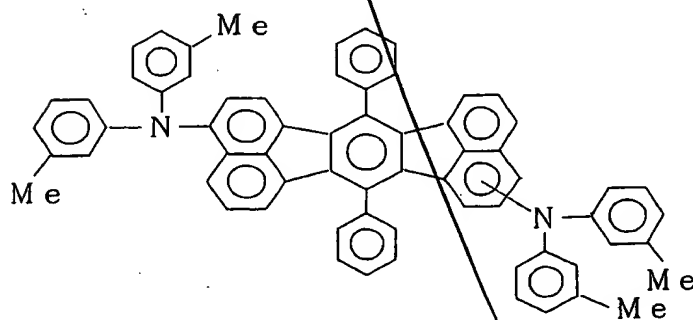
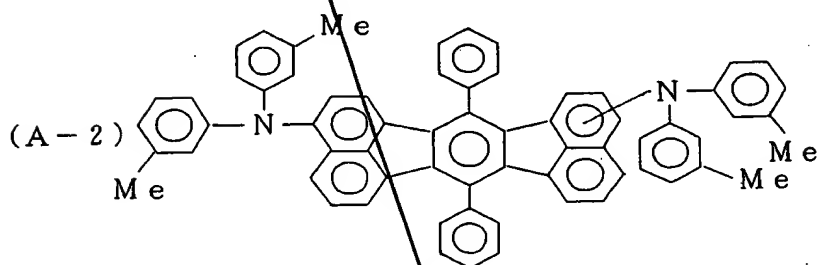
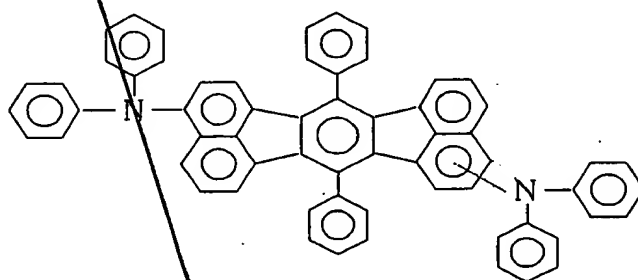
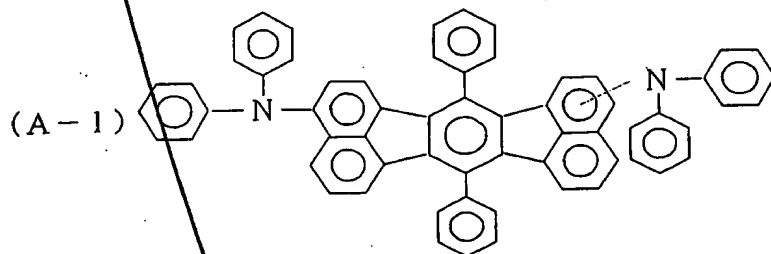


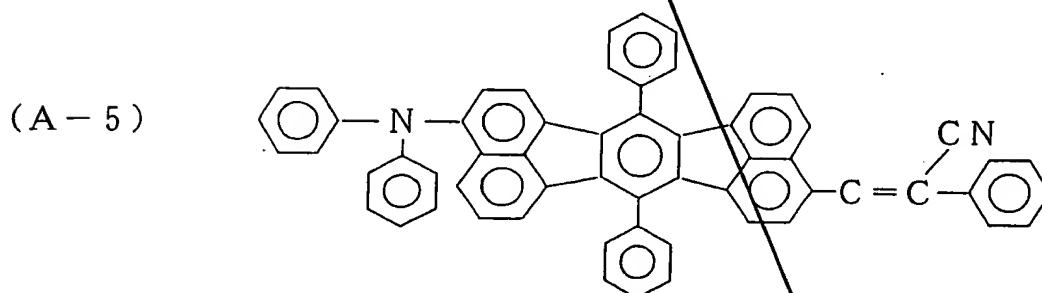
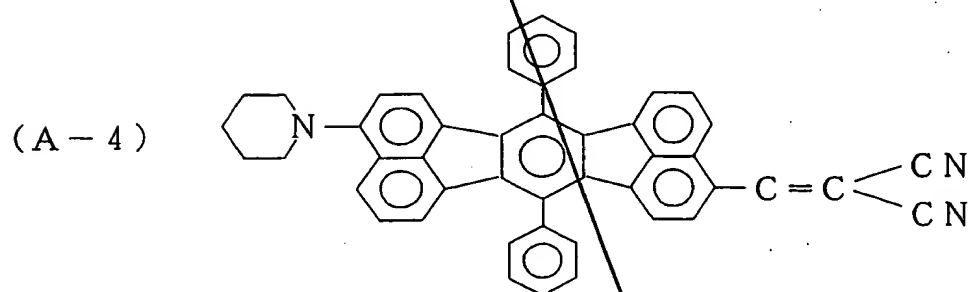
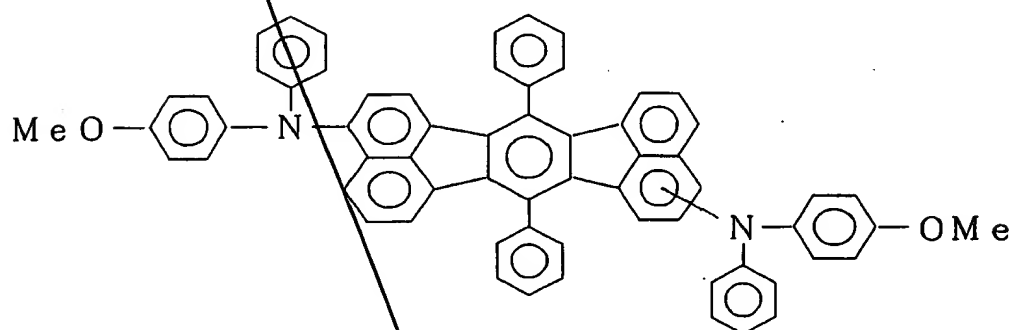
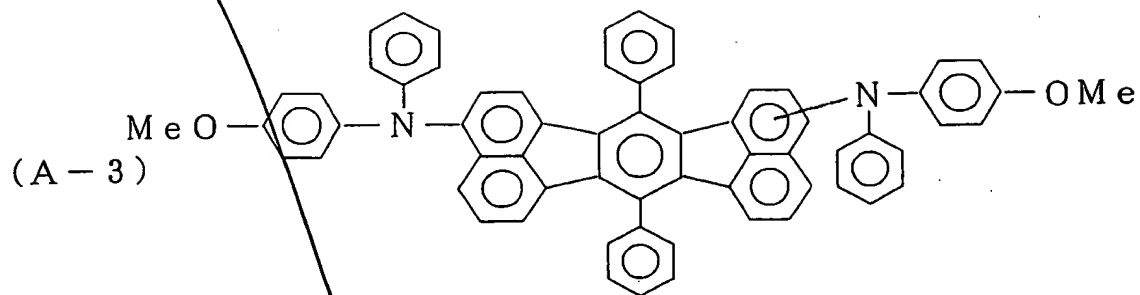
B/C corrected

(B - 19)

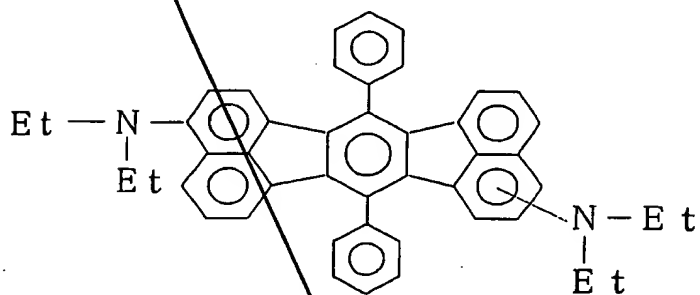
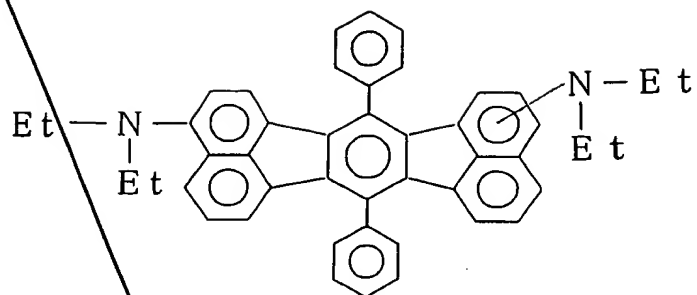


17. (New) The compound according to Claim 15, wherein the compound has at least one structure selected from the group consisting of:

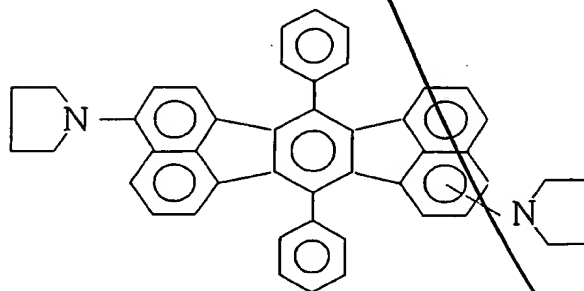
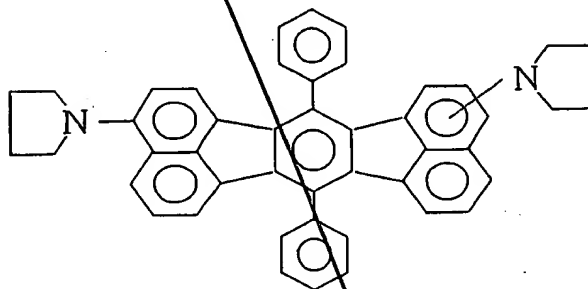




(A-6)

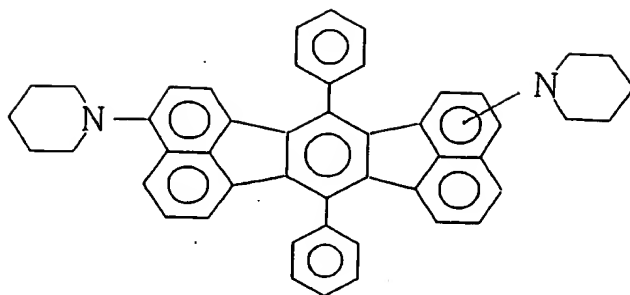


(A-7)

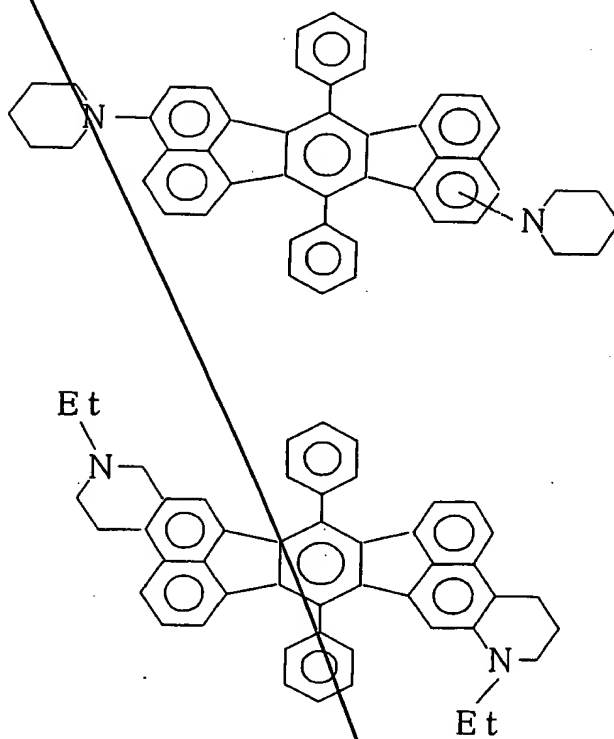


B7 carb

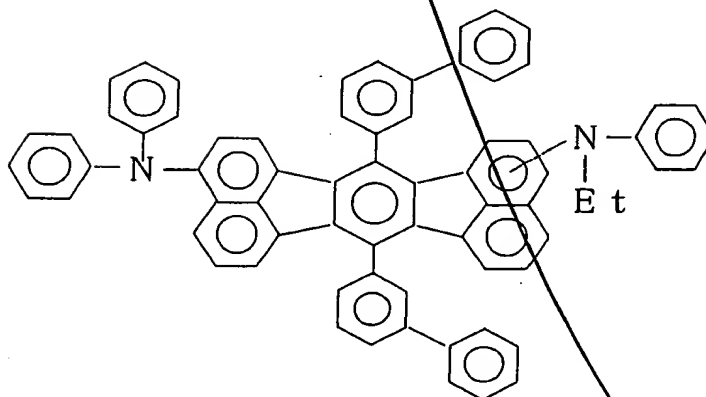
(A-8)



(A-9)

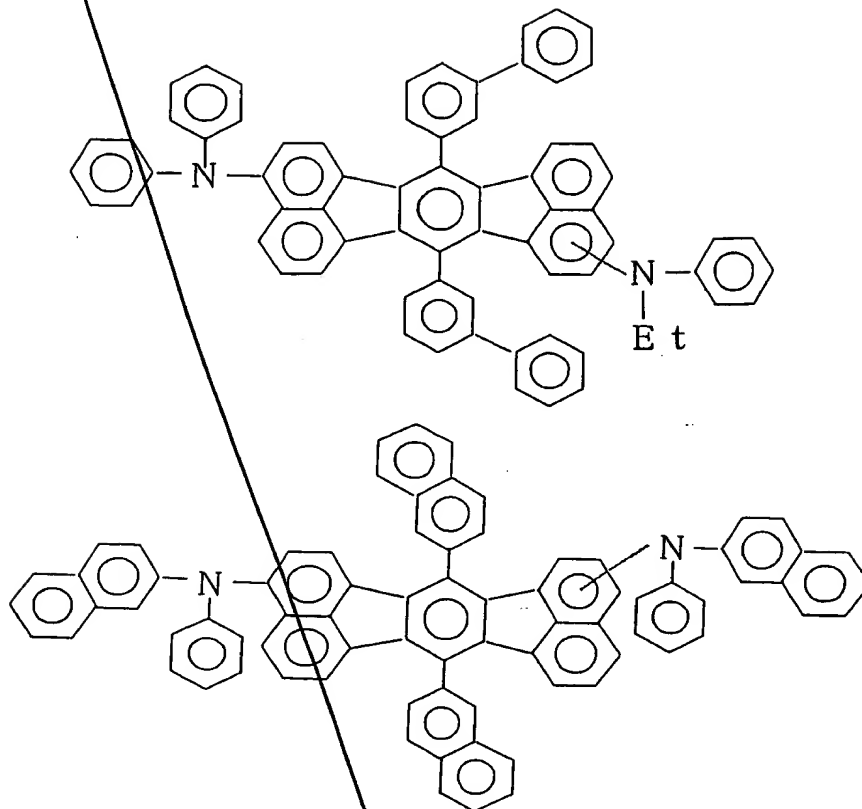


(A-10)

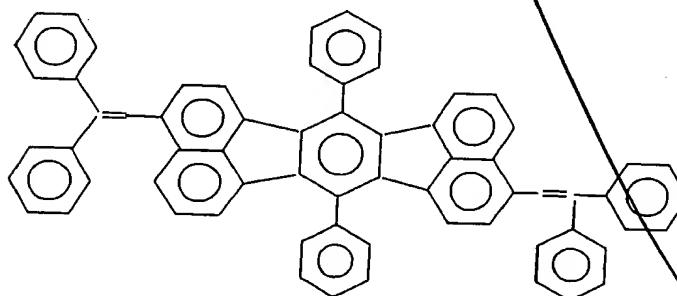


B9 could

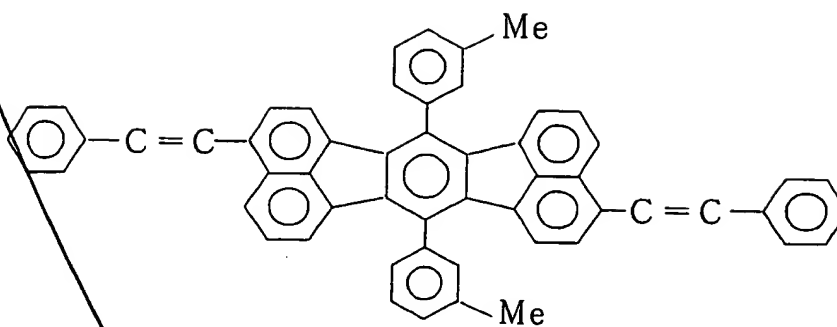
(A-11)



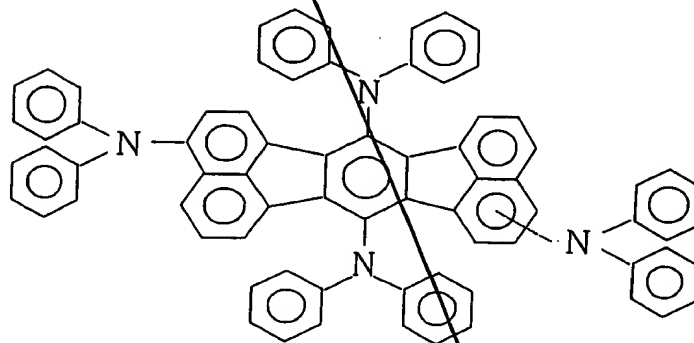
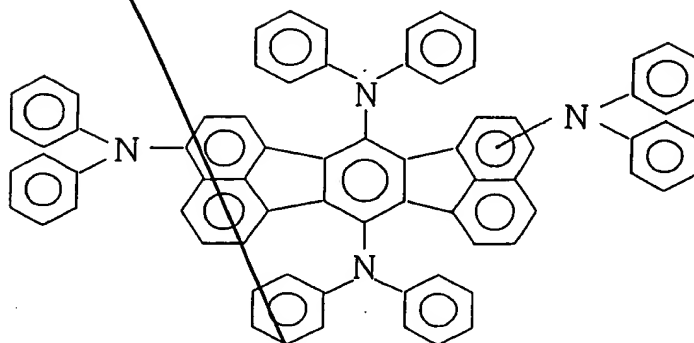
(A-12)



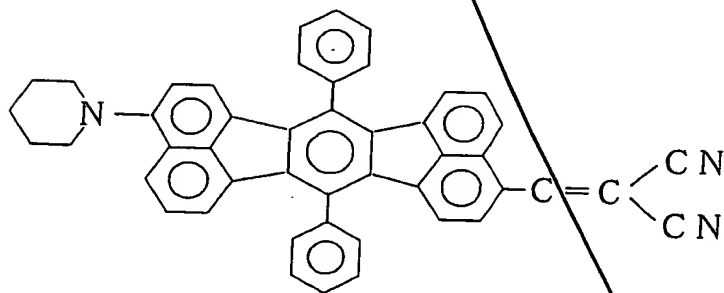
(A-13)



(A-14)

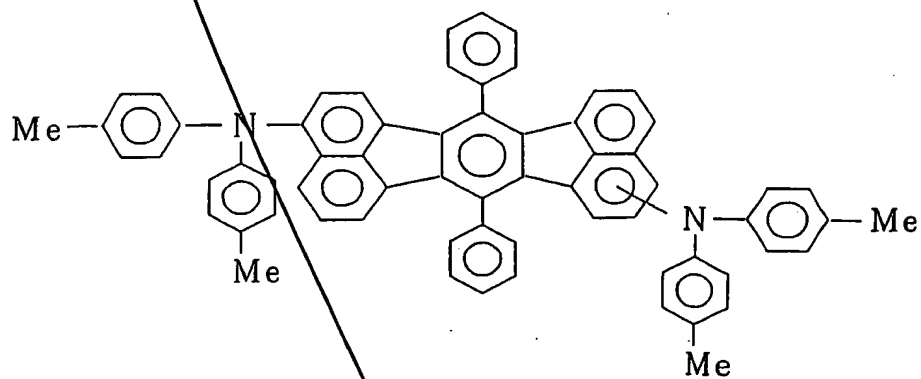
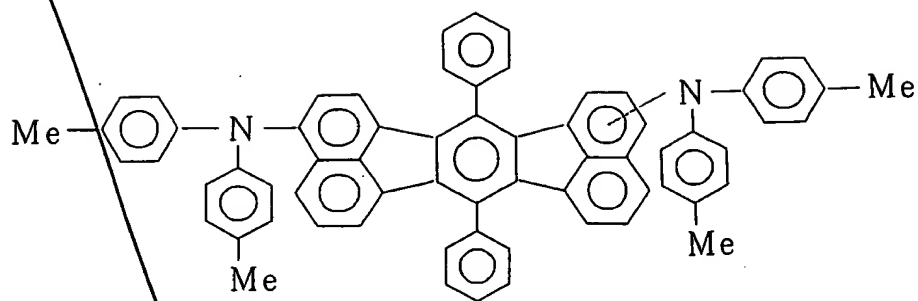


(A-15)

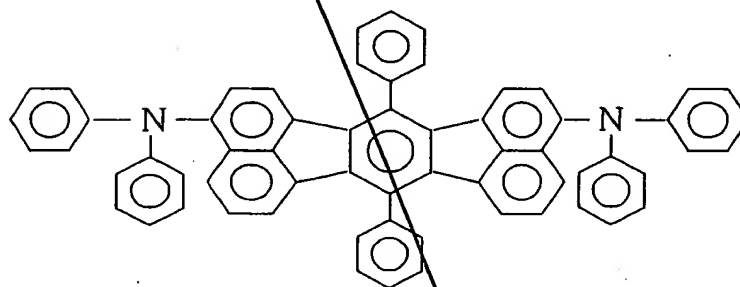


Blank

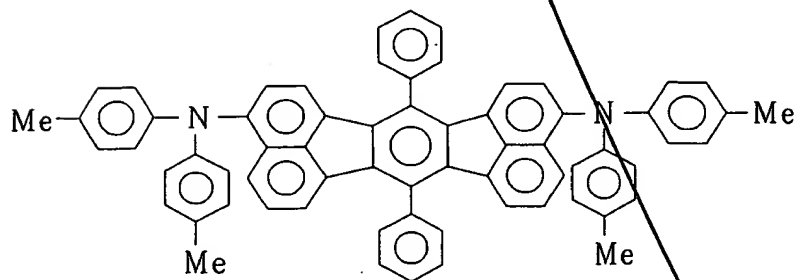
(A-16)



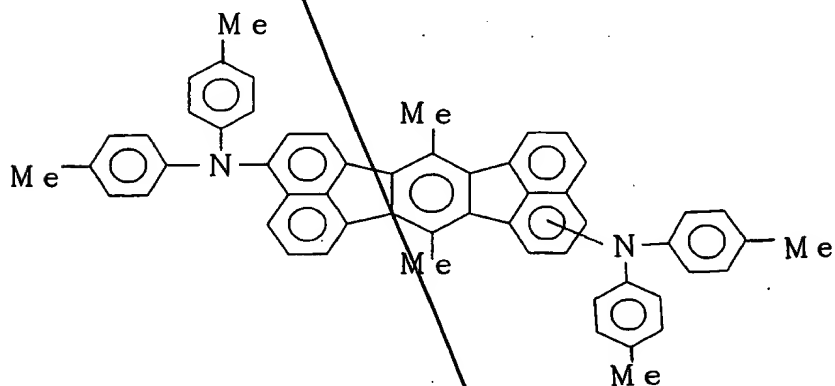
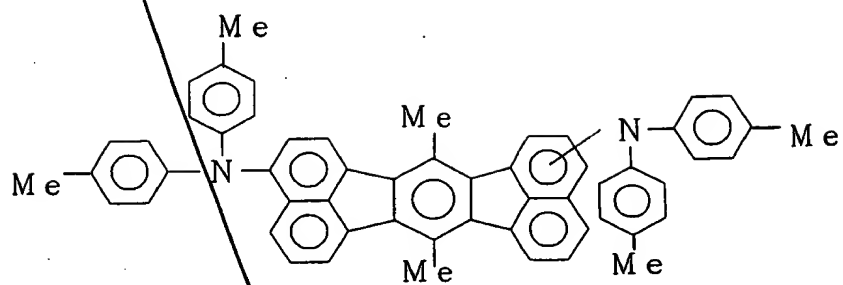
(A-17)



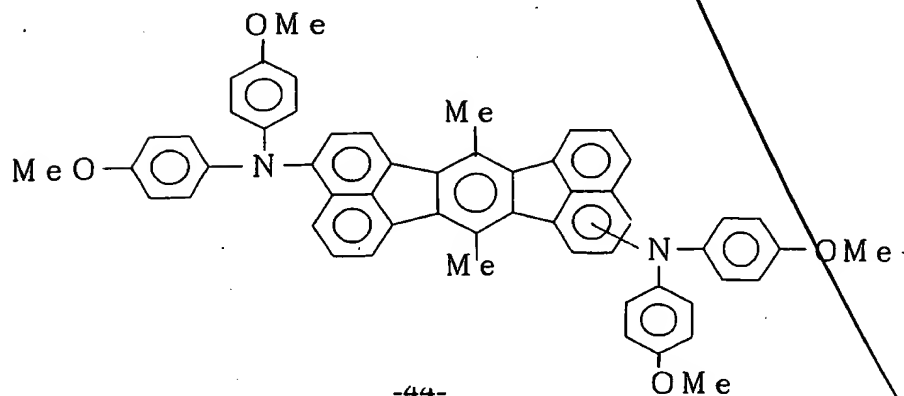
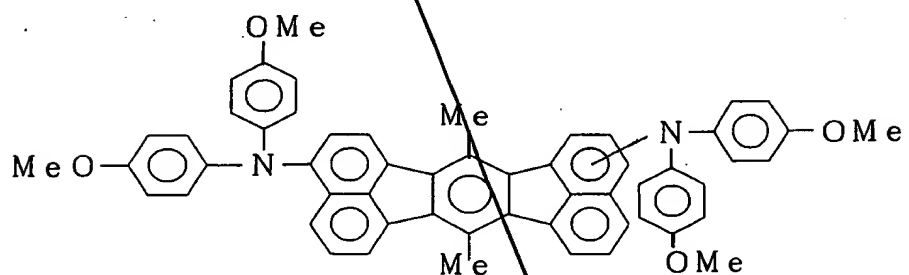
(A-18)



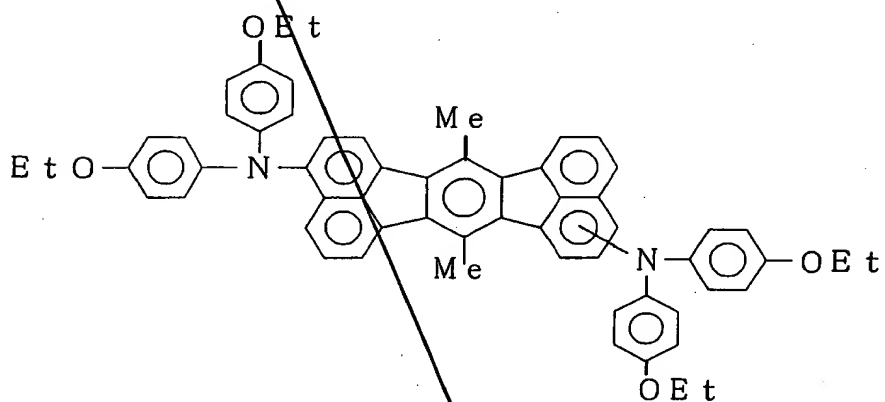
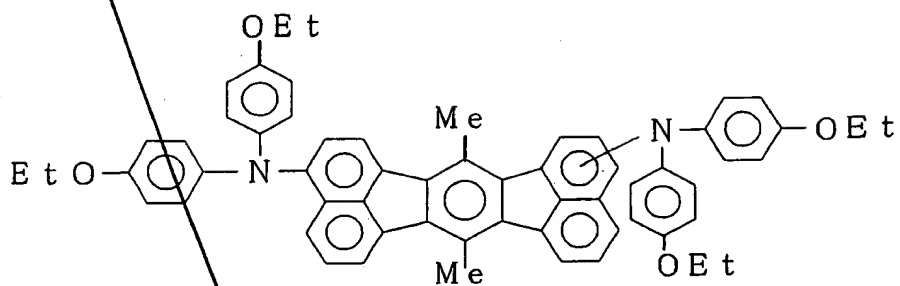
(A-19)



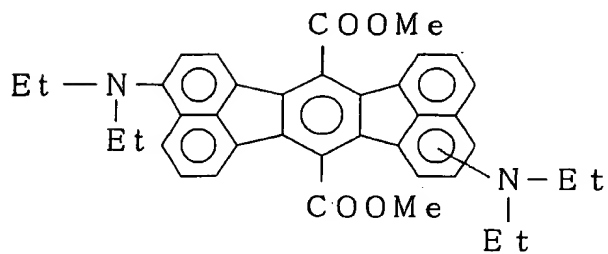
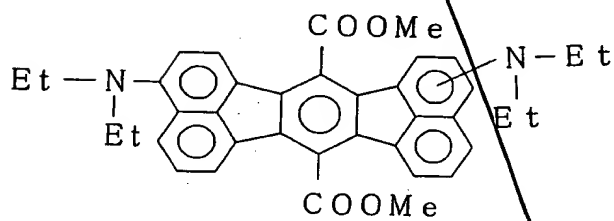
(A-20)



(A-21)

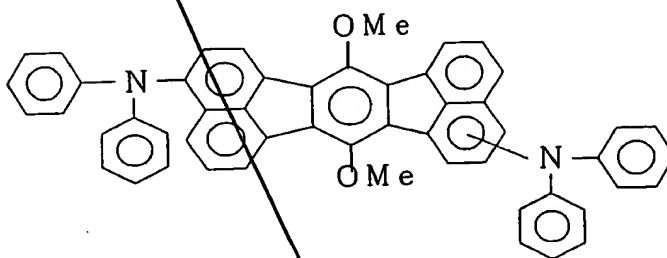
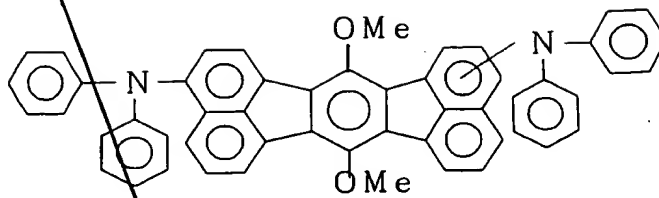


(A-22)

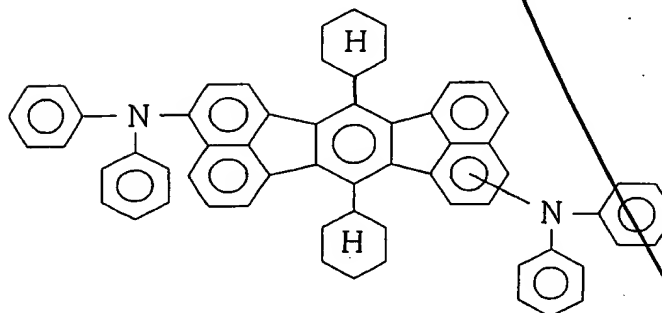
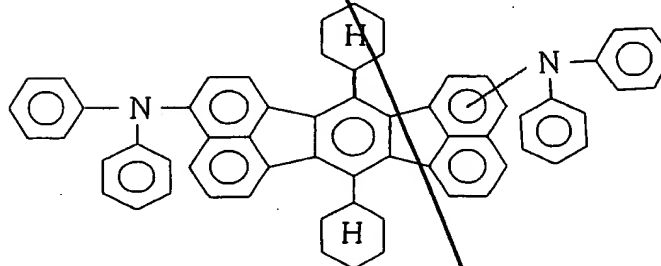


BY *Cartel*

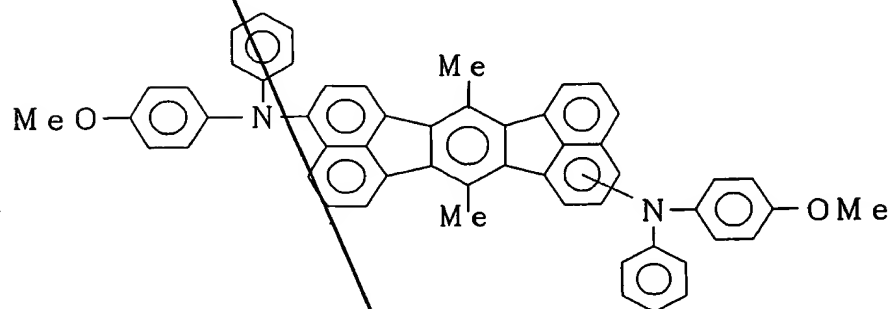
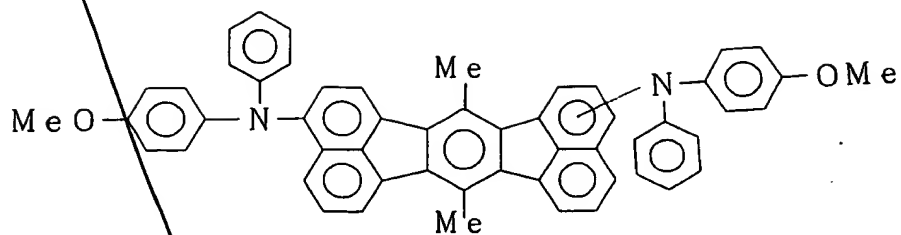
(A-23)



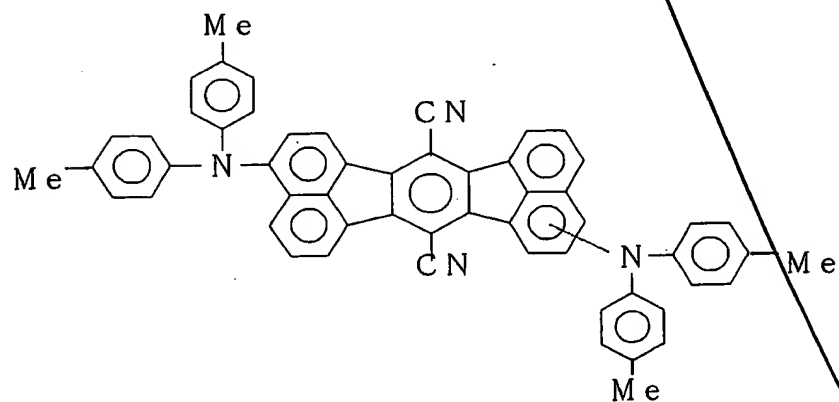
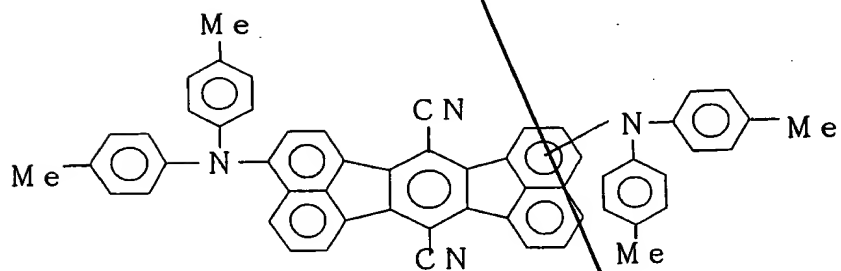
(A-24)



(A-25)

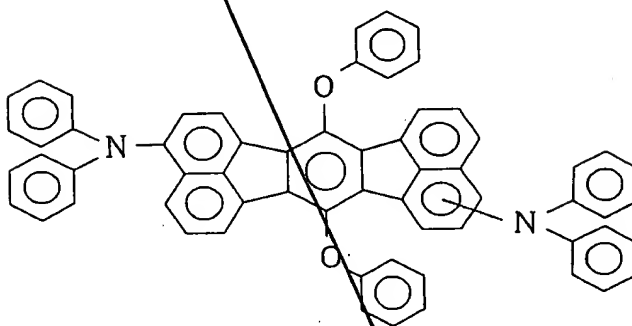
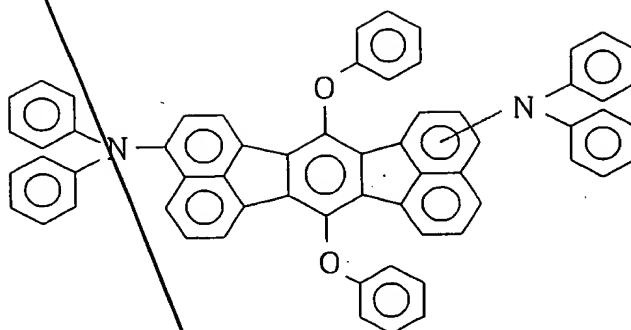


(A-26)

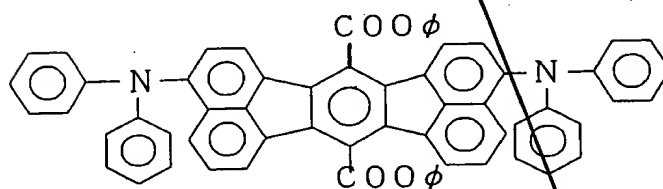


B/C 12

(A-27)



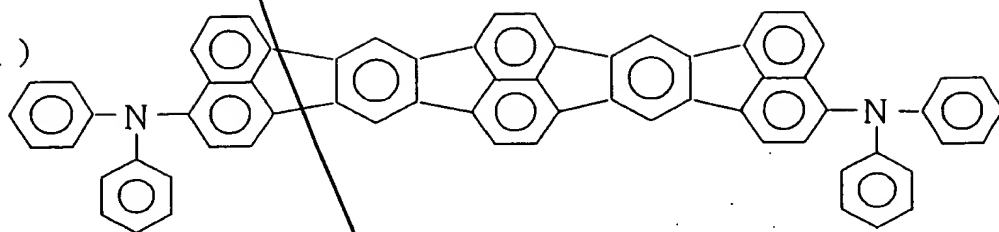
(A-28)



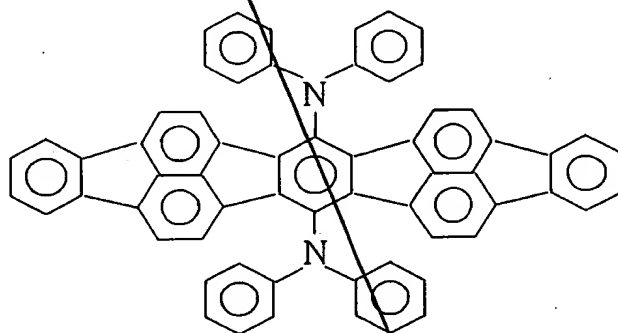
(ϕ is phenyl group)

B⁹ Contd

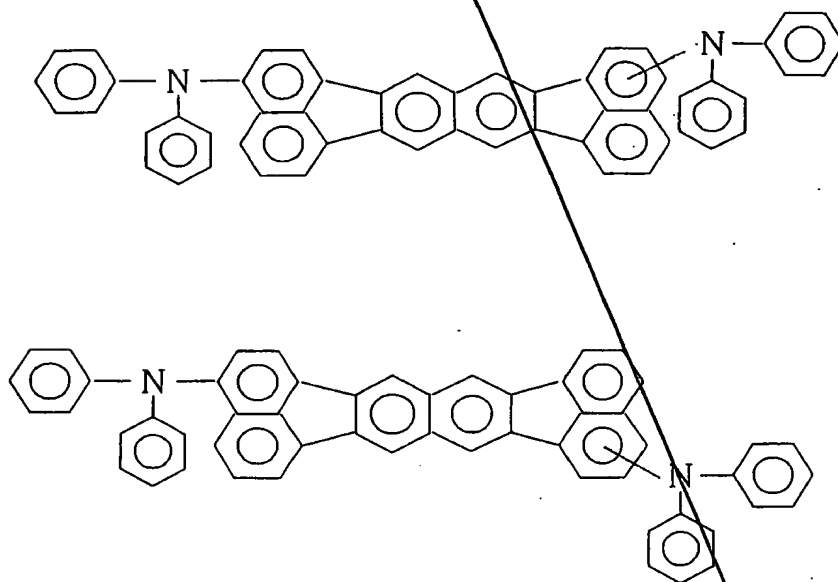
(B-1)



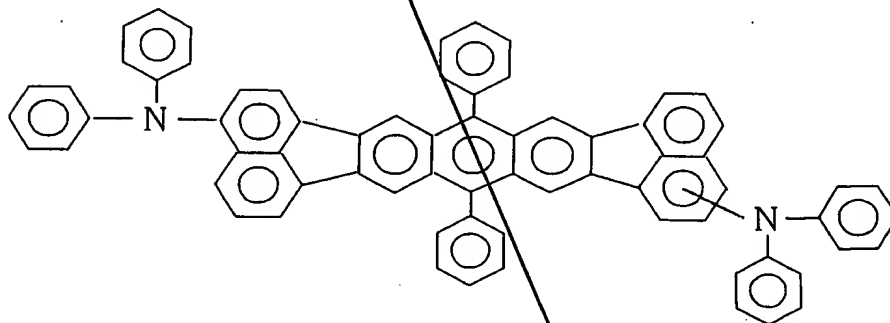
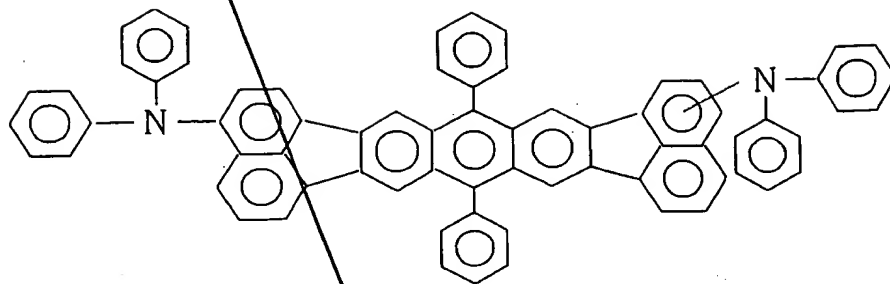
(B-2)



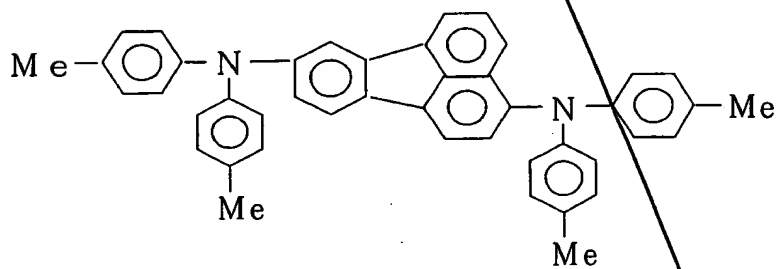
(B-3)



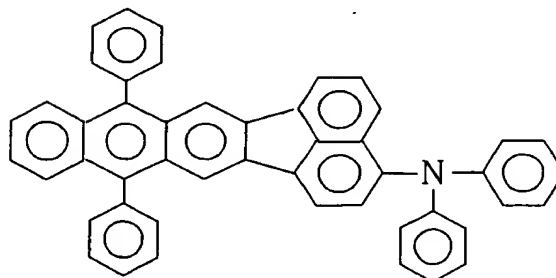
(B-4)



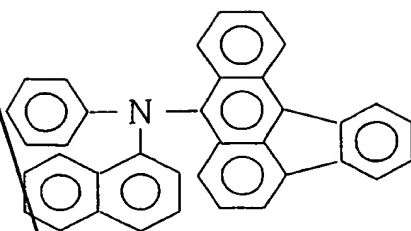
(B-5)



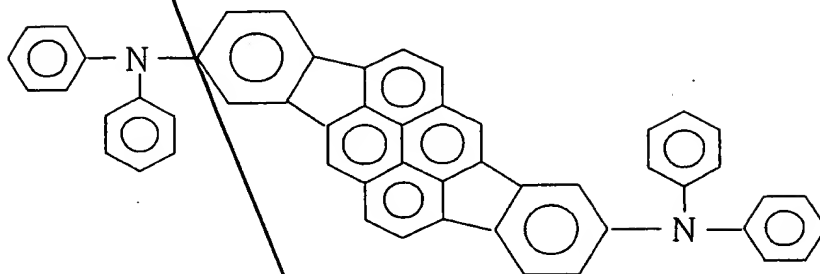
(B-6)



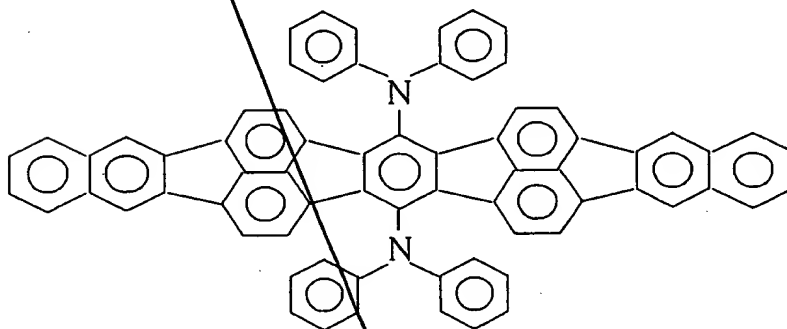
(B-7)



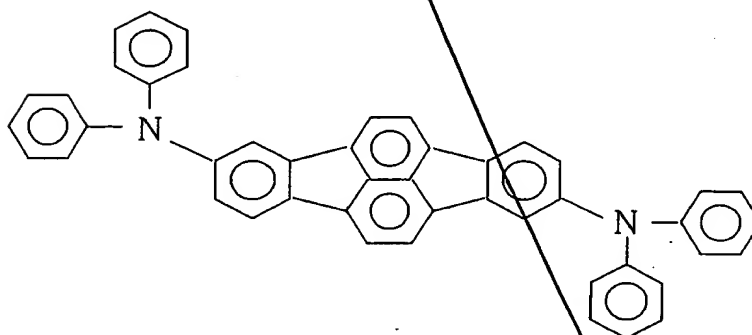
(B-8)



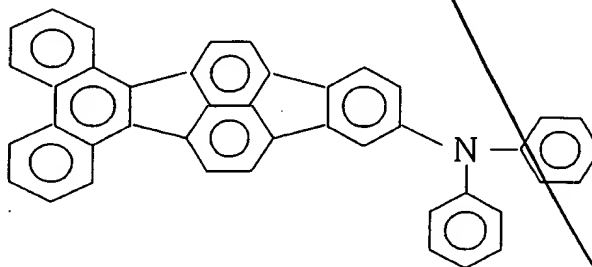
(B-9)



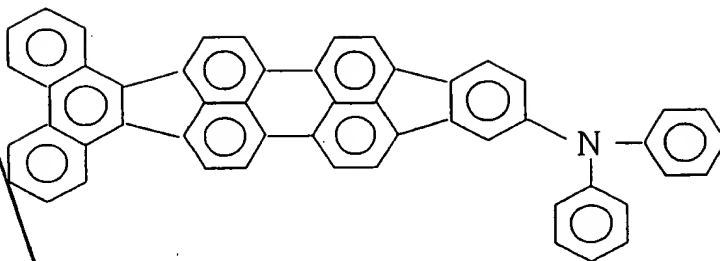
(B-10)



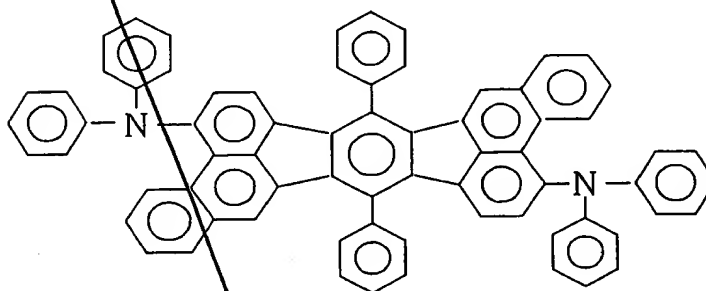
(B-11)



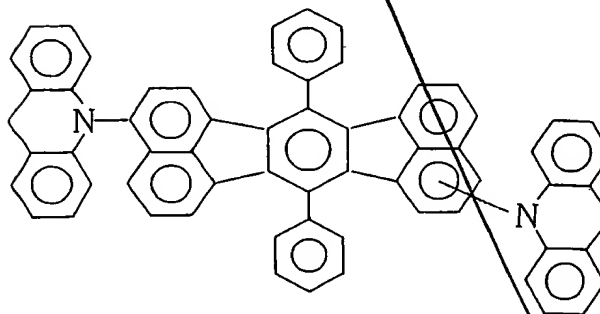
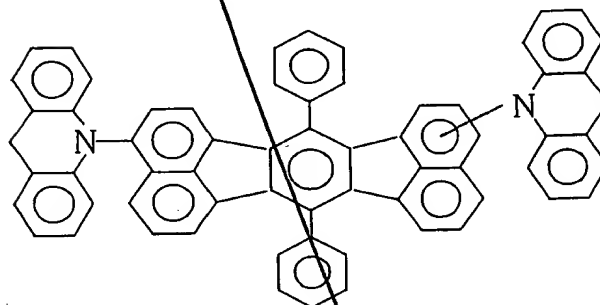
(B-12)



(B-13)

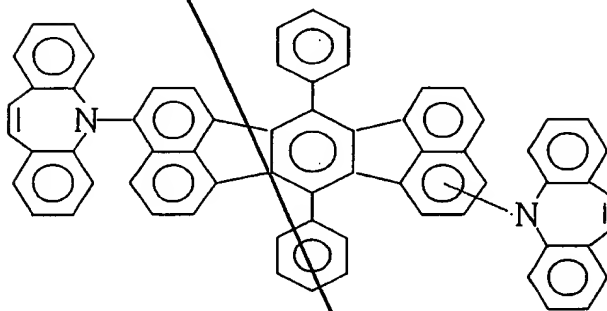
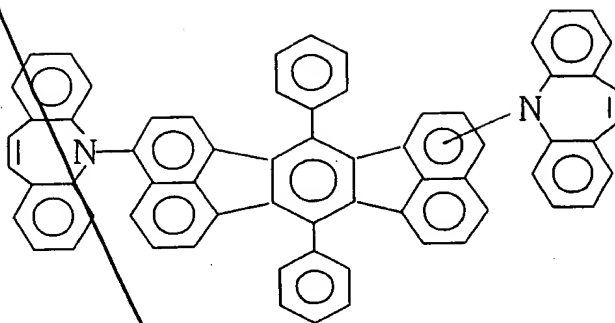


(B-14)

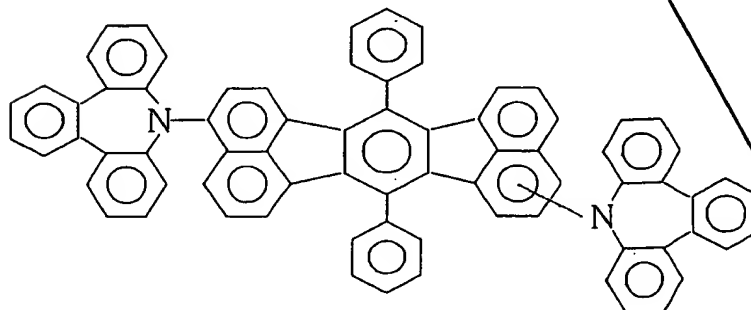
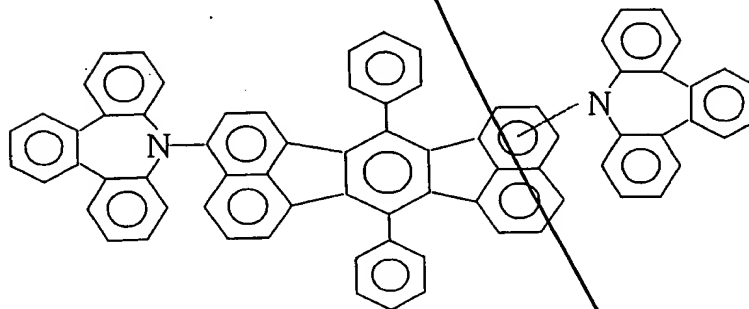


B^y C₁₀H₆

(B-15)

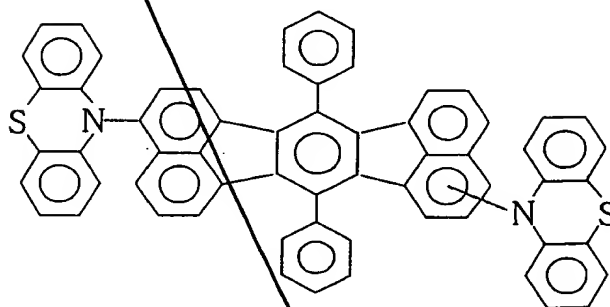
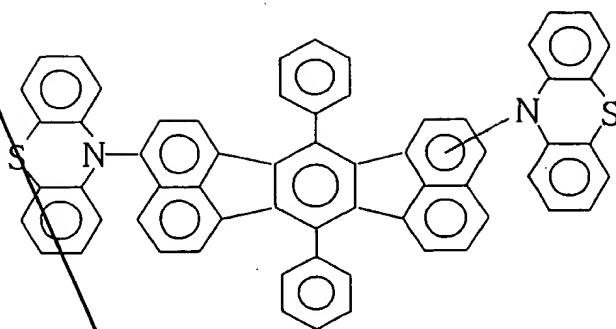


(B-16)

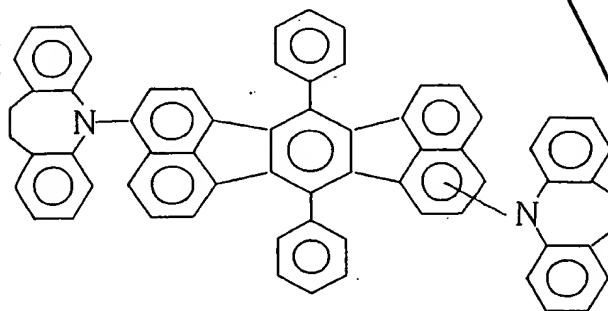
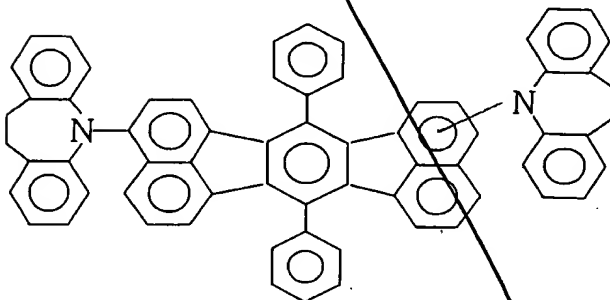


B/Cat

(B-17)

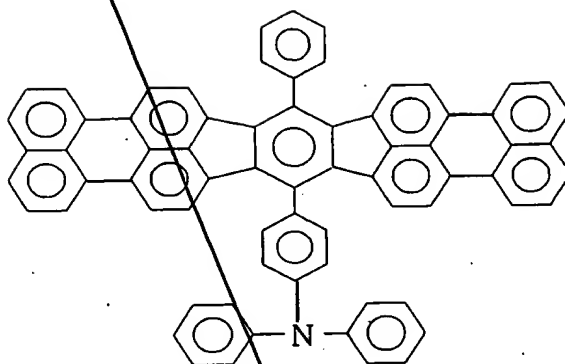


(B-18)



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(B - 19)



SUPPORT FOR THE AMENDMENT

The specification has been amended to correctly recite the proper reference information of JP 10-168445 published in 1998. This is an obvious typographical error as is obvious by the enclosed copy of JP 11-168445 published in 1999 and listed on the IDS attached hereto. Please note that JP 11-168445 published in 1999 has absolutely no relation to the technology described in the present application. Claims 2, 9, and 10 are cancelled in favor of new Claims 13-15. Claims 3-7 and 11-12 are amended. Support for the amendment is found in the original claims. Further, new Claims 16-17 is added. Support for new Claims 16-17 is found at pages 15-33 of the specification. No new matter is believed to be introduced by the amendment.

REMARKS

Claims 3-8, and 11-17 are pending. Favorable reconsideration is respectfully requested. At the outset, Applicants thank Examiner Garret for the brief helpful discussion held on May 1, 2003, indicating that the above amendment appeared to further favorable prosecution of the present application. Further, Applicants thank Examiner for indicating that Claim is allowable, and for providing helpful suggestions to overcome the rejections in the outstanding Office Action.

The rejections of Claims 2-13 under 35 U.S.C. § 102(b) and/or § 103(a) over Nakatsuka et al. (JP 10-168445 (JP'445)) are believed to be obviated by the above amendment. Further, Claims 2-12 are neither disclosed nor suggested by Nakatsuka et al. (JP 10-168445 (JP'445)) in light of the following remarks.

The present invention relates to an electroluminescence device containing a chemical compound of formula [1] to [14] and [16] to [18]. Compounds [1] to [14] may contain